UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2020

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 001-32924

GREEN PLAINS INC.

(Exact name of registrant as specified in its charter)

Iowa	**84-1652107**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1811 Aksarben Drive, Omaha, NE 68106	**(402) 884-8700**
(Address of principal executive offices, including zip code)	(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value $0.001 per share	GPRE	The Nasdaq Stock Market LLC

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 such files).
Yes x No ☐

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 ☐	Accelerated filer x
Non-accelerated filer ☐	
Smaller reporting company ☐	Emerging growth company ☐

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. x

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

The aggregate market value of the company's voting common stock held by non-affiliates of the registrant as of June 30, 2020 (the last business day of the second quarter), based on the last sale price of the common stock on that date of $10.22, was approximately $344.0 million. For purposes of this calculation, executive officers and directors are deemed to be affiliates of the registrant.

As of February 11, 2021, there were 35,651,123 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for the 2021 Annual Meeting of Shareholders are incorporated by reference in Part III herein. The company intends to file such Proxy Statement with the Securities and Exchange Commission no later than 120 days after the end of the period covered by this report on Form 10-K.

TABLE OF CONTENTS

		Page
Commonly Used Defined Terms		2
	PART I	
Item 1.	Business.	4
Item 1A.	Risk Factors.	17
Item 1B.	Unresolved Staff Comments.	32
Item 2.	Properties.	32
Item 3.	Legal Proceedings.	33
Item 4.	Mine Safety Disclosures.	33
	PART II	
Item 5.	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.	34
Item 6.	Selected Financial Data.	36
Item 7.	Management's Discussion and Analysis of Financial Condition and Results of Operations.	38
Item 7A.	Quantitative and Qualitative Disclosures About Market Risk.	57
Item 8.	Financial Statements and Supplementary Data.	58
Item 9.	Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.	58
Item 9A.	Controls and Procedures.	58
Item 9B.	Other Information.	62
	PART III	
Item 10.	Directors, Executive Officers and Corporate Governance.	62
Item 11.	Executive Compensation.	62
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.	62
Item 13.	Certain Relationships and Related Transactions, and Director Independence.	62
Item 14.	Principal Accounting Fees and Services.	62
	PART IV	
Item 15.	Exhibits, Financial Statement Schedules.	63
Item 16.	Form 10-K Summary.	71
Signatures.		72

Commonly Used Defined Terms

Green Plains Inc. and Subsidiaries:

Green Plains; the company	Green Plains Inc. and its subsidiaries
BioProcess Algae	BioProcess Algae LLC
Birmingham BioEnergy	Birmingham BioEnergy Partners LLC, a subsidiary of BlendStar LLC
BlendStar	BlendStar LLC and its subsidiaries, the partnership's predecessor for accounting purposes
Fleischmann's Vinegar	Fleischmann's Vinegar Company, Inc.
FQT	Fluid Quip Technologies, LLC
Green Plains Cattle; GPCC	Green Plains Cattle Company LLC
Green Plains Grain	Green Plains Grain Company LLC
Green Plains Partners; the partnership	Green Plains Partners LP and its subsidiaries
Green Plains Processing	Green Plains Processing LLC and its subsidiaries
Green Plains Shenandoah; Shenandoah	Green Plains Shenandoah LLC
Green Plains Trade	Green Plains Trade Group LLC
Green Plains Wood River; Wood River	Green Plains Wood River LLC

Accounting Defined Terms:

ASC	Accounting Standards Codification
EBITDA	Earnings before interest, income taxes, depreciation and amortization
EPS	Earnings per share
Exchange Act	Securities Exchange Act of 1934, as amended
GAAP	U.S. Generally Accepted Accounting Principles
JV	Joint venture
LIBOR	London Interbank Offered Rate
Nasdaq	The Nasdaq Global Market
NMTC	New Markets Tax Credit
R&D Credits	Research and development tax credits
SEC	Securities and Exchange Commission
Securities Act	Securities Act of 1933, as amended

Industry Defined Terms:

Bgy	Billion gallons per year
BTU	British Thermal Units
CAFE	Corporate Average Fuel Economy
CARB	California Air Resources Board
CST	Clean Sugar Technology
DOT	U.S. Department of Transportation
E15	Gasoline blended with up to 15% ethanol by volume
E85	Gasoline blended with up to 85% ethanol by volume
EIA	U.S. Energy Information Administration
EISA	Energy Independence and Security Act of 2007, as amended
EPA	U.S. Environmental Protection Agency
FDA	U.S. Food and Drug Administration
GNS	Grain Neutral Spirits
ILUC	Indirect land usage charge
LCFS	Low Carbon Fuel Standard
MMBTU	Million British Thermal Units
Mmg	Million gallons
Mmgy	Million gallons per year
MSC	Maximized Stillage Coproducts
MTBE	Methyl tertiary-butyl ether
MVC	Minimum volume commitment
RFS II	Renewable Fuels Standard II
RIN	Renewable identification number
RVO	Renewable volume obligation
TTB	Alcohol and Tobacco Tax and Trade Bureau
U.S.	United States
USDA	U.S. Department of Agriculture
USP	United States Pharmacopeia

Cautionary Statement Regarding Forward-Looking Statements

The SEC encourages companies to disclose forward-looking information so investors can better understand future prospects and make informed investment decisions. As such, forward-looking statements are included in this report or incorporated by reference to other documents filed with the SEC.

Forward-looking statements are made in accordance with safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These statements are based on current expectations which involve a number of risks and uncertainties and do not relate strictly to historical or current facts, but rather to plans and objectives for future operations. These statements include words such as “anticipate,” “believe,” “continue,” “estimate,” “expect,” “intend,” “outlook,” “plan,” “predict,” “may,” “could,” “should,” “will” and similar words and phrases as well as statements regarding future operating or financial performance or guidance, business strategy, environment, key trends and benefits of actual or planned acquisitions.

Factors that could cause actual results to differ from those expressed or implied are discussed in this report under “Risk Factors” or incorporated by reference. Specifically, we may experience fluctuations in future operating results due to a number of economic conditions, including: disruption caused by health epidemics, such as the COVID-19 outbreak; competition in the ethanol industry and other industries in which we operate; commodity market risks, including those that may result from weather conditions; financial market risks; counterparty risks; risks associated with changes to government policy or regulation, including changes to tax laws; risks related to acquisitions and disposition activities and achieving anticipated results; risks associated with merchant trading; risks related to our equity method investees and other factors detailed in reports filed with the SEC. Additional risks related to Green Plains Partners LP include compliance with commercial contractual obligations, potential tax consequences related to our investment in the partnership and risks disclosed in the partnership’s SEC filings associated with the operation of the partnership as a separate, publicly traded entity.

We believe our expectations regarding future events are based on reasonable assumptions; however, these assumptions may not be accurate or account for all risks and uncertainties. Consequently, forward-looking statements are not guaranteed. Actual results may vary materially from those expressed or implied in our forward-looking statements. In addition, we are not obligated and do not intend to update our forward-looking statements as a result of new information unless it is required by applicable securities laws. We caution investors not to place undue reliance on forward-looking statements, which represent management’s views as of the date of this report or documents incorporated by reference.

PART I

Item 1. Business.

References to “we,” “us,” “our,” “Green Plains,” or the “company” refer to Green Plains Inc. and its subsidiaries.

Overview

Green Plains is an Iowa corporation, founded in June 2004 as a producer of low carbon fuels and has grown to be one of the leading corn processors in the world. We continue the transition from a commodity-processing business to a value-add agricultural technology company focused on creating additional diverse, non-cyclical, higher margin feed ingredients, specialty alcohols and renewable feedstocks for the emerging renewable diesel industry. In addition, we are currently undergoing a number of project initiatives to improve our operating margins. Through our Project 24 initiative, we anticipate reductions in operating expense per gallon across our non-ICM plants. USP upgrades and planned GNS upgrades are expected to provide additional improvements to our financial results. Additionally, through our Ultra-High Protein initiative, we expect to produce various Ultra-High Protein and novel feed ingredients targeting the pet, dairy and aquaculture industries further increasing margin per gallon.

We recently completed the purchase of a majority interest in Fluid Quip Technologies, LLC. The acquisition capitalizes on the core strengths of each company to develop and implement proven, value-added agriculture, food and industrial biotechnology systems and rapidly expand installation and production across Green Plains facilities, as well as offer these technologies to partnering biofuel facilities.

Additionally, we have taken advantage of opportunities to divest certain assets in recent years to reallocate capital toward our current growth initiatives. We are focused on generating stable operating margins through our business segments and risk management strategy and expanding our focus on specialty alcohols and high value protein ingredients. We own and operate assets throughout the ethanol value chain: upstream, with grain handling and storage; through our ethanol production facilities; and downstream, with marketing and distribution services to mitigate commodity price volatility.

We formed Green Plains Partners LP, a master limited partnership, to be our primary downstream storage and logistics provider since its assets are the principal method of storing and delivering the ethanol we produce. The partnership completed its initial public offering on July 1, 2015. As of December 31, 2020, we own a 48.9% limited partner interest, a 2.0% general partner interest and all of the partnership’s incentive distribution rights. The public owns the remaining 49.1% limited partner interest. The partnership is consolidated in our financial statements.

We group our business activities into the following four operating segments to manage performance:

- *Ethanol Production.* Our ethanol production segment includes the production of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil at 12 ethanol plants in Illinois, Indiana, Iowa, Minnesota, Nebraska and Tennessee. At capacity, our facilities are capable of processing approximately 354 million bushels of corn per year and producing approximately 1.0 billion gallons of ethanol, 2.5 million tons of distillers grains and 276 million pounds of industrial grade corn oil, making us one of the largest ethanol producers in North America.

- *Agribusiness and Energy Services.* Our agribusiness and energy services segment includes grain procurement, with approximately 38.1 million bushels of grain storage capacity, and our commodity marketing business, which markets, sells and distributes ethanol, distillers grains and corn oil produced at our ethanol plants. We also market ethanol for a third-party producer as well as buy and sell ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein, corn oil, grain, natural gas and other commodities in various markets.

- *Food and Ingredients.* Our food and ingredients segment currently includes our food-grade corn oil operations. Fleischmann’s Vinegar, one of the world’s largest producers of food-grade industrial vinegar, was also included in the food and ingredients segment until its sale on November 27, 2018. On September 1, 2019, we formed a joint venture and sold 50% of our cattle feeding operations which has the capacity to support approximately 355,000 head of cattle and grain storage capacity of approximately 24.1 million bushels. The assets and liabilities and results of operations of GPCC prior to its divesture have been reclassified as discontinued operations for all periods presented. Our continued investment in GPCC was accounted for under the equity method of accounting until its disposition in October 2020. For more information about GPCC, refer to *Note 5 - Acquisitions, Dispositions and Discontinued Operations* and *Note 21 – Equity Method Investments* included as part of the notes to consolidated financial statements.

- *Partnership.* Our master limited partnership provides fuel storage and transportation services by owning, operating, developing and acquiring ethanol and fuel storage tanks, terminals, transportation assets and other related assets and businesses. The partnership's assets include 31 ethanol storage facilities, six fuel terminal facilities and approximately 2,480 leased railcars.

Risk Management and Hedging Activities

Our margins our highly dependent on commodity prices, particularly for ethanol, corn, distillers grains, corn oil and natural gas. Since market price fluctuations among these commodities are not always correlated, ethanol production has been and may continue to be unprofitable at times. We use a variety of risk management tools and hedging strategies to monitor real-time operating price risk exposure at each of our operations to obtain favorable margins, when available.

We use forward contracts to sell a portion of our ethanol, distillers grains, and corn oil production or buy some of the corn, natural gas, or ethanol we need to partially offset commodity price volatility. We also engage in other hedging transactions involving exchange-traded futures contracts for corn, natural gas, ethanol, soybean meal, soybean oil and other agricultural commodities. The financial impact of these activities depends on the price of the commodities involved and our ability to physically receive or deliver those commodities.

Hedging arrangements expose us to risk of financial loss when the counterparty defaults on its contract or, in the case of exchange-traded contracts, when the expected differential between the price of the underlying commodity and physical commodity changes. Hedging activities can result in losses when a position is purchased in a declining market or sold in a rising market. Hedging losses may be offset by a decreased cash price for corn and natural gas and an increased cash price for ethanol, distillers grains, Ultra-High Protein and corn oil. Depending on the circumstance, we vary the amount of hedging or other risk mitigation strategies we undertake and sometimes choose not to engage in hedging transactions at all.

Competitive Strengths

We are focused on managing commodity price risks, improving operational efficiencies and optimizing market opportunities to create an efficient platform with diversified income streams. Our competitive strengths include:

Disciplined Risk Management. Risk management is a core competency and we use a variety of risk management tools and hedging strategies to maintain a disciplined approach. Our internally developed operating margin management system allows us to monitor commodity price risk exposure at each of our operations and lock in favorable margins, when available, or temporarily reduce production levels during periods of compressed margins.

Operational Excellence. Our facilities are staffed with experienced industry personnel who share operational knowledge and expertise. We focus on making incremental operational improvements to enhance performance using real-time production data and systems to monitor our operations and optimize performance.

Technology Integration. Over our history, we have incorporated new technologies like corn oil extraction and Selective Milling Technology™ into our manufacturing processes that have enabled us to run more efficiently and improve our financial results. We are currently undergoing a number of project initiatives to improve margins. Through our Project 24 initiative, we have seen reductions in operating expenses and anticipate additional reductions in operating expense per gallon across our remaining non-ICM plants as a result of these continuing investments. USP upgrades and planned GNS and CST upgrades are expected to provide additional improvements to our financial results.

In addition, through our Ultra-High Protein initiative using Fluid Quip's MSC™ system, we expect to achieve increased margins per gallon as a result of the ability to produce various high protein animal feed products. We have partnered with Novozymes in an exclusive venture to produce higher purity protein and protein meals with nutritional and other feed benefits through non-mechanical methods. In addition, the formation of an exclusive partnership with Hayashikane Sangyo of Japan, one of the oldest and most successful integrated aquafeed companies in the world broadens our access to innovative feed solutions. The acquisition of a majority interest in Fluid Quip Technologies secures additional intellectual property rights that could be deployed across the Green Plains platform, including those aimed at developing and implementing proven, value-added agriculture, food and industrial biotechnology systems, and rapidly expanding installation of Ultra-High Protein production across our facilities in parallel with offering these technologies to partnering biofuel facilities. We continue to evaluate additional technological opportunities to expand our capabilities and product offerings in the coming years.

Proven Management Team. Our senior management team averages approximately 30 years of commodity risk management and related industry experience. We have specific expertise across all of our businesses, including plant operations and management, commodity markets and risk management, quality assurance, quality control, and ethanol marketing and distribution. Our management team's level of operational and financial expertise is essential to successfully executing our business strategies.

Business Strategy

We believe that the world will continue to increase its demand for protein for human consumption, driving the need to produce larger amounts of high protein feed for animals and aquaculture. With new technologies introduced in the ethanol industry, we believe that ethanol production facilities can increasingly become high-protein feed producers. We began operations to produce Ultra-High Protein in 2020 and have begun to deploy this technology at additional locations in an effort to capture higher co-product returns. We are striving to deploy Ultra-High Protein process technology across our platform to take advantage of the world's growing demand for protein feed ingredients.

Our first Ultra-High Protein installation was completed at our Shenandoah plant during the first quarter of 2020 with shipments of dried product beginning in April 2020. The Ultra-High Protein installation at our Wood River plant began during the third quarter 2020 with shipments expected to begin in the third quarter of 2021. We anticipate that additional locations will be completed over the course of the next several years. Through our Ultra-High Protein initiative we expect to produce feed ingredients with protein concentration of 50% or greater, as well as other higher value products, such as post-MSC distillers grains.

We have also upgraded our York plant to produce USP grade alcohol and will complete further upgrades to produce GNS by adding additional distillation and processing capabilities to serve other high-value markets, including the beverage alcohol market. The GNS upgrade is expected to be completed during the second quarter of 2021. Our Wood River plant is undergoing upgrades to modify its capacity to produce USP and we anticipate completion of that project during the second quarter of 2021 and will continue to produce USP grade alcohol during construction. We expect to complete the CST production facility at York in the first quarter of 2021, which will allow for the production of both food and industrial grade dextrose. We anticipate modifying one or more biorefineries to CST production facilities to meet anticipated future customer demands.

We believe ethanol could become an increasingly larger portion of the global fuel supply driven by heightened environmental concerns and energy independence goals, supported by government policies and regulations. In the 1990's, federal law required the use of oxygenates in reformulated gasoline to reduce vehicle emissions in cities with unhealthy levels of air pollution. Today, ethanol is the primary oxygenate used by the U.S. refining industry to meet various federal and state air emission standards. The high octane value of ethanol has also made it the primary additive used by refiners to increase octane value, which improves engine performance. Accordingly, ethanol has become a valuable blend component that comprises approximately 10% of the domestic gasoline supply with the potential to grow with higher blends and increased gasoline demand. Ethanol usage is further supported by federal government mandates under RFS II, which assigns individual refiners, blenders and importers the volume of renewable fuels they are obligated to use based on their percentage of total fuel sales. Advances in domestic corn yields have helped the U.S. ethanol industry become the lowest-cost producer of ethanol, surpassing Brazil, creating demand for U.S. ethanol worldwide.

In light of the ethanol industry's environment, we are focused on continued improvement of our low-cost ethanol production platform and reducing costs. Owning grain storage at or near our ethanol plants allows us to develop relationships with local producers and originate corn more effectively at a lower average cost. We purchase approximately 55% of our corn volume directly from farmers and have approximately 45 production days of storage capacity at or near our ethanol plants. We use our performance data to develop strategies that can be applied across our platform and embrace technological advances to improve operational efficiencies and yields, such as Selective Milling Technology™ and Enogen® corn enzyme technology, to lower our processing cost per gallon and increase production volumes. We are executing on our Project 24 initiative at our non-ICM plants, except our York and Atkinson plants, to reduce energy consumption and increase operational reliability at these plants, reducing our operating expense per gallon which we anticipate completing during the second quarter of 2021.

We believe there is untapped value across our businesses and we intend to further develop and strengthen our business by identifying projects that maximize our production capabilities and lower existing costs at our production facilities. We also seek to leverage our core competencies in adjacent businesses such as aquafeeds, high protein animal feed and other commodity processing operations that maximize our operational and risk management expertise.

Recent Developments

The following is a summary of our significant recent developments. Additional information about these items can be found elsewhere in this report or in previous reports filed with the SEC.

BlackRock Note Facility

On February 9, 2021, Green Plains SPE LLC, a wholly owned subsidiary of the company and a special purpose entity (the Issuer) completed a $125.0 million, 5-year mezzanine note facility with funds and accounts managed by BlackRock. The proceeds will be used initially to support the construction and deployment of Ultra-High Protein technology and production at the Obion, Tennessee and Mount Vernon, Indiana facilities. In addition, the company announced BlackRock has invested alongside Ospaire Management and Green Plains in Fluid Quip Technologies LLC. As part of the transaction, BlackRock acquired 2,000,000 warrants for Green Plains stock (each warrant equal to one share of stock) with a strike price of $22.00 per share, which expire on February 9, 2026. See further discussions in *Note 23 – Subsequent Events* of the financial statements.

Disposition of Ord Ethanol Plant

On January 25, 2021, we entered into an Asset Purchase Agreement to sell our ethanol plant located in Ord, Nebraska to GreenAmerica Biofuels Ord LLC. The transaction involves the disposition of 65 million gallons of nameplate capacity, and is being sold for $64.0 million, plus an estimated $6.0 million of related working capital. Correspondingly, the partnership entered into an Asset Purchase Agreement to sell its storage assets located adjacent to the Ord plant to Green Plains for $27.0 million, which will be used to pay down debt, along with the transfer of associated railcar operating leases. As part of this transaction, upon closing, the quarterly storage and throughput minimum volume commitment with Green Plains Trade will be reduced to 217.7 mmg per quarter and the storage and throughput agreement with Green Plains Trade will be extended an additional year to June 30, 2029. The transaction is anticipated to close within 45 days, subject to customary closing conditions. See further discussions in *Note 23 – Subsequent Events* of the financial statements.

Disposition of Hereford Ethanol Plant

On December 28, 2020, we completed the sale of the ethanol plant located in Hereford, Texas, and certain related assets from subsidiaries, to Hereford Ethanol Partners, L.P. for the sale price of $39.0 million, plus working capital. Correspondingly, the partnership's ethanol storage assets located adjacent to the Hereford plant were purchased by the company for $10.0 million, which was used to pay down debt, and certain railcar operating leases were assigned to Hereford Ethanol Partners, L.P. The divested assets were reported within the ethanol production, agribusiness and energy and partnership segments. We recorded a pretax loss on the sale of the ethanol plant of $22.4 million, of which $18.5 million was recorded within corporate activities and $3.9 million was recorded within the ethanol production segment. Transaction fees related to the disposal were not material. The agreement contains certain earn-out provisions to be received from Hereford Ethanol Partners, L.P. if certain future provisions are met. We will record any contingent amounts in the consolidated financial statements when the amount is reasonably determinable or the consideration is realized.

Acquisition of Majority Interest in Fluid Quip Technologies, LLC

In December 2020, we acquired a majority interest in Fluid Quip Technologies, LLC. The acquisition capitalizes on the core strengths of each company to develop and implement proven, value-added agriculture, food and industrial biotechnology systems and rapidly expand installation and production of Ultra-High Protein across Green Plains facilities, as well as offer these technologies to partnering biofuel facilities. The agreement contains certain earn-out provisions to be received from the company if certain future results are met, including but not limited to, results of implementation and execution of technology. We will record the obligation related to the earn-out provision as compensation within selling, general and administrative expenses as the earn-out becomes probable.

Disposition of Equity Interest in Green Plains Cattle Company LLC

On October 9, 2020, we sold our remaining 50% joint venture interest in GPCC to AGR Special Opportunities Fund I LP ("AGR"), TGAM Agribusiness Fund LP and StepStone (the "Buyers") for $80.5 million in cash, plus closing adjustments. The transaction was effective on October 1, 2020, and resulted in a reduction in other assets of $69.7 million as a result of removal of the equity method investment in GPCC, and a reduction in accumulated other comprehensive income (loss) of $10.7 million as a result of the removal of our share of GPCC's accumulated other comprehensive loss. Transaction fees related to the disposal were not material. There was no material gain or loss recorded as part of this transaction. The agreement contains certain earn-out provisions to be paid to or received from the Buyers if certain EBITDA thresholds are

met. We will record any contingent amounts in the consolidated financial statements when the amount is probable and reasonably determinable or the consideration is realized.

Closing of $75.0 Million Loan Facility

On September 3, 2020, Green Plains Wood River and Green Plains Shenandoah, our wholly-owned subsidiaries, entered into a delayed draw loan agreement with MetLife Real Estate Lending LLC. The $75.0 million delayed draw loan matures on September 1, 2035 and is secured by substantially all of the assets of the Wood River and Shenandoah facilities. The delayed draw loan bears interest at a fixed rate of 5.02%, plus an interest rate premium of 1.5% until the loan is fully drawn, which must occur within the 18 month draw period. Principal payments of $1.5 million per year begin 24 months from the closing date. The proceeds from the loan are being used to add high protein processing systems at the Wood River and Shenandoah facilities as well as other capital expenditures.

Impact of COVID-19 and Decline in Gasoline Demand

We continue to closely monitor the impact of COVID-19 on all aspects of our business, including how it will impact our employees, customers, vendors, and business partners. Although we did not incur significant disruptions from COVID-19 during the year ended December 31, 2020, the COVID-19 pandemic and related economic repercussions have created significant volatility, uncertainty, and turmoil in the energy industry. The situation surrounding COVID-19 continues to evolve rapidly and the ultimate duration and impact of the outbreak as well as the continued decline in gasoline demand remains highly uncertain and subject to change. There was a significant reduction of gasoline demand in certain market areas particularly during the early months of the pandemic, which resulted in a reduction in ethanol demand. The return to prior levels of gasoline demand continues to be uncertain.

There has been no material adverse effect on our ability to maintain operations, including our financial reporting systems, our internal controls over financial reporting or our disclosure controls and procedures. In addition, to date we have not incurred any material COVID-19 related contingencies. We are unable to predict the impact that COVID-19 will have on our future financial position and operating results due to numerous uncertainties.

For further information regarding the impact of COVID-19 and the decline in gasoline demand on the company, please see *Item 1A - Risk Factors*, in this report, which is incorporated herein by reference.

Operating Segments

Ethanol Production Segment

Industry Overview. Ethanol, also known as ethyl alcohol or grain alcohol, is a colorless liquid produced by fermenting carbohydrates found in a number of different types of grains, such as corn, wheat and sorghum, and other cellulosic matter found in plants. Most of the ethanol produced in the United States is made from corn because it contains large quantities of carbohydrates that convert into glucose more easily than most other kinds of biomass, which can be handled efficiently and is in greater supply than other grains. According to the USDA, on average, one bushel, or 56 pounds, of corn, produces approximately 2.9 gallons of ethanol, 15 pounds of distillers grains and 0.7 pounds of corn oil. Outside of the United States, sugarcane is the primary feedstock used to produce ethanol.

Ethanol is a significant component of the biofuels industry, which includes all transportation fuels derived from renewable biological materials. Biofuels are an excellent oxygenate and source of octane. When added to petroleum-based transportation fuels, oxygenates reduce vehicle emissions. Ethanol is the most economical oxygenate and source of octane available on the market and its production costs are competitive with gasoline.

Ethanol Plants. We operate 12 dry mill ethanol production plants, located in six states, that produce ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil:

Plant Location	Initial Operation or Acquisition Date	Technology	Plant Production Capacity (mmgy)
Atkinson, Nebraska	June 2013	Delta-T	55
Central City, Nebraska	July 2009	ICM	116
Fairmont, Minnesota	Nov. 2013	Delta-T / ICM	119
Madison, Illinois	Sept. 2016	Vogelbusch	90
Mount Vernon, Indiana	Sept. 2016	Vogelbusch	90
Obion, Tennessee (1)	Nov. 2008	ICM	120
Ord, Nebraska	July 2009	ICM	65
Otter Tail, Minnesota	Mar. 2011	Delta-T / ICM	55
Shenandoah, Iowa (1)	Aug. 2007	ICM	82
Superior, Iowa (1)	July 2008	Delta-T / ICM	60
Wood River, Nebraska	Nov. 2013	Delta-T / ICM	121
York, Nebraska	Sept. 2016	Vogelbusch	50
Total			1,023

(1) We constructed these three plants; all other ethanol plants were acquired.

Our business is directly affected by the supply and demand for ethanol and other fuels in the markets served by our assets. Miles driven typically increase during the spring and summer months related to vacation travel, followed closely by the fall season due to holiday travel.

The majority of our plants are equipped with industry-leading ICM or Delta-T ethanol processing technology. Our years of experience building, acquiring and operating these technologies provides us with a deep understanding of how to effectively and efficiently manage both platforms for maximum performance. Through our Project 24 initiative, we anticipate reductions in operating expense per gallon across our non-ICM plants.

Industrial-Grade Alcohol. Industrial-grade alcohol is produced by further distillation processing of the 200-proof alcohol. Further distillation removes impurities from fuel-grade ethanol to allow for production of industrial-grade alcohol which can be used as an ingredient for sanitation products. Industrial-grade alcohol is currently produced at our Wood River and York facilities, with our Wood River biorefinery producing food chemical codex (FCC) grade industrial alcohol and our York biorefinery producing USP.

Corn Feedstock and Ethanol Production. Our plants use corn as feedstock in a dry mill ethanol production process. Each of our plants requires approximately 17 million to 42 million bushels of corn annually, depending on its production capacity. The price and availability of corn are subject to significant fluctuations driven by a number of factors that affect commodity prices in general, including crop conditions, weather, governmental programs, freight costs and global demand. Ethanol producers are generally unable to pass increased corn costs to customers.

Our corn supply is obtained primarily from local markets. We use cash and forward purchase contracts with grain producers and elevators to buy corn. We maintain direct relationships with local farmers, grain elevators and cooperatives, which serve as our primary sources of grain feedstock, at 10 of our ethanol plants. This allows us to purchase much of the corn we need directly from farmers throughout the year. At two of our ethanol plants, we contract with a third-party grain originator to supply the corn necessary for ethanol production. These contracts terminate in November 2023. Each of our plants is also situated on rail lines or has other logistical solutions to access corn supplies from other regions of the country should local supplies become insufficient.

Corn is received at the plant by truck or rail then weighed and unloaded into a receiving building. Grain storage facilities are used to inventory grain that is passed through a scalper to remove rocks and debris prior to processing. The corn is then transported to a hammer mill where it is ground into flour and conveyed into a slurry tank for enzymatic processing. Water, heat and enzymes are added to convert the complex starch molecules into simpler carbohydrates. The slurry is heated to reduce the potential of microbial contamination and pumped into a liquefaction tank where additional enzymes are added. Next, the grain slurry is pumped into fermenters, where yeast, enzymes, and nutrients are added and the fermentation process is started. A beer column, within the distillation system, separates the alcohol from the spent grain mash. The alcohol is dehydrated to 200-proof alcohol and either pumped into a holding tank and blended with approximately 2% denaturant as it is pumped into finished product storage tanks, or marketed as undenatured ethanol.

Distillers Grains. The spent grain mash is pumped from the beer column into a decanter-type centrifuge for dewatering. The water, or thin stillage, is pumped from the centrifuge into an evaporator, where it is concentrated into a thick syrup. The solids, or wet cake, that exit the centrifuge are conveyed to the dryer system and dried at varying temperatures to produce distillers grains. Syrup is reapplied to the wet cake prior to drying to provide additional nutrients. Distillers grains, the principal co-product of the ethanol production process, are used as mid-protein, high-energy animal feed and marketed to the dairy, beef, swine and poultry industries.

We can produce three forms of distillers grains, depending on the number of times the solids are passed through the dryer system:

- wet distillers grains, which contain approximately 65% to 70% moisture, have a shelf life of approximately three days and is therefore sold to dairies or feedlots within the immediate vicinity;
- modified wet distillers grains, which is dried further to approximately 50% to 55% moisture, have a shelf life of approximately three weeks and are marketed to regional dairies and feedlots; and
- dried distillers grains, which have been dried more extensively to approximately 10% to 12% moisture, have an almost indefinite shelf life and may be stored, sold and shipped to any market.

Corn Oil. Corn oil systems extract non-edible corn oil from the thin stillage evaporation process immediately before the production of distillers grains. Corn oil is produced by processing the syrup through a decanter-style, or disk-stack, centrifuge. The centrifuges separate the relatively light corn oil from the heavier components of the syrup. We extract approximately 0.8 pounds of corn oil per bushel of corn used to produce ethanol. Industrial uses for corn oil include feedstock for renewable diesel, biodiesel and livestock feed additives. The syrup is blended into wet, modified wet or dried distillers grains.

Ultra-High Protein. Ultra-High Protein is produced by further processing of the spent grain mash from the beer column. The spent grain is processed by a FluidQuip Technologies MSC™ system. The MSC system contains a series of screening equipment to remove fiber from the spent grain which is sent to the distillers grain dryer. The remaining product is washed and clarified into a wet protein stream which is dried in a ring dryer to produce Ultra-High Protein meal. The product typically has protein concentration of 50% or greater and yields of approximately 3.5 pounds per bushel have been achieved.

Natural Gas. Depending on production parameters, our ethanol plants use approximately 20,000 to 45,000 BTUs of natural gas per gallon of production. We have service agreements to acquire the natural gas we need and transport the gas through pipelines to our plants.

Electricity. Our plants require between 0.5 and 1.6 kilowatt hours of electricity per gallon of production. Local utilities supply the necessary electricity to all of our ethanol plants.

Water. While some of our plants satisfy a majority of their water requirements from wells located on their respective properties, each plant also obtains drinkable water from local municipal water sources. Each facility either uses city water or operates a filtration system to purify the well water that is used for its operations. Local municipalities supply all of the necessary water for our plants that do not have onsite wells. Most of the water used in an ethanol plant is recycled in the production process.

Agribusiness and Energy Services Segment

Our agribusiness and energy services segment includes three grain elevators in three states with combined grain storage capacity of approximately 7.6 million bushels, and grain storage at our ethanol plants of approximately 30.5 million bushels, detailed in the following table:

Facility Location	On-Site Grain Storage Capacity (thousands of bushels)
Grain Elevators	
Archer, Nebraska	1,246
Essex, Iowa	3,651
Hopkins, Missouri	2,713
Ethanol Plants	
Atkinson, Nebraska	5,109
Central City, Nebraska	1,400
Fairmont, Minnesota	1,611
Madison, Illinois	1,015
Mount Vernon, Indiana	1,034
Obion, Tennessee	8,168
Ord, Nebraska	2,575
Otter Tail, Minnesota	2,772
Shenandoah, Iowa	886
Superior, Iowa	2,230
Wood River, Nebraska	3,293
York, Nebraska	347
Total	38,050

We buy bulk grain, primarily corn and soybeans, from area producers, and provide grain drying and storage services to those producers. The grain is used as feedstock for our ethanol plants or sold to grain processing companies and area livestock producers. Bulk grain commodities are traded on commodity exchanges. Inventory values are affected by changes in these markets and spreads. To mitigate risks related to market fluctuations from purchase and sale commitments of grain, as well as grain held in inventory, we enter into exchange-traded futures and options contracts that function as economic and designated accounting hedges at times.

Seasonality is present within our agribusiness operations. The fall harvest period typically results in higher handling margins and stronger financial results during the fourth quarter of each year.

Through Green Plains Trade, we market the ethanol we and a third party produce to local, regional, national and international customers. We also purchase ethanol from independent producers for pricing arbitrage. We sell to various markets under sales agreements with integrated energy companies; retailers, traders and resellers in the United States and buyers for export to Brazil, Canada, Europe, China and other international markets. Under these agreements, ethanol is priced under both fixed and indexed pricing arrangements.

Also through Green Plains Trade, we market wet and modified wet distillers grains to local markets and dried distillers grains to local, national and international markets. The bulk of our demand is delivered to geographic regions that do not have significant local corn or distillers grains production.

Our markets can be further segmented by geographic region and livestock industry. Most of our wet and modified wet distillers grains are sold to midwestern feedlot markets. A substantial amount of dried distillers grains are shipped by barge, containers and rail to regional and national markets, as well as international markets. Our dried distillers grains are shipped to feedlots and poultry markets, as well as Texas and West Coast rail markets. Some of our distillers grains are shipped by truck to dairy, beef, and poultry operations in the eastern United States. We also ship by railcar to eastern and southeastern feed mills, poultry and dairy operations, and domestic trade companies. We sell to international markets indirectly through exporters. Access to diversified markets allows us to sell product to customers offering the highest net price.

Our corn oil is sold primarily to renewable diesel and biodiesel plants and, to a lesser extent, feedlot and poultry markets. We transport our corn oil by truck to locations in a close proximity to our ethanol plants primarily in the southeastern and midwestern regions of the United States. We also transport corn oil by rail and barges to national markets as well as to exporters for shipment on vessels to international markets.

Through Green Plains Trade, we provide marketing services of natural gas to our ethanol plants and to other third parties including the procurement of both the pipeline capacity and natural gas. We also enhance the value by aggregating volumes at various storage facilities which can be sold to either the plants or various intermediary markets and end markets.

Our railcar fleet for the agribusiness and energy services segment consists of approximately 400 leased hopper cars to transport distillers grains and approximately 170 leased tank cars to transport corn oil and crude oil. The initial terms of the lease contracts are for periods up to ten years and the weighted average remaining lease terms on these cars was approximately 3 years.

Food and Ingredients Segment

Food-grade corn oil production. Our food-grade corn oil operations focus on shipping corn oil from facilities across the Midwest by rail or barge to terminal facilities located in the southern United States. Once the corn oil arrives at the terminal facility, it is unloaded and consolidated into set volumes and prepared for shipment by vessel. The corn oil is then shipped to independent refiners outside the United States for refining into a refined, bleached, dewaxed and deodorized food-grade product. This finished product is then shipped by vessel or container to our various customers. In addition, we also execute trade volumes of corn oil and soybean oil in both domestic and international markets. Food-grade corn oil production had no activity during fiscal year 2020.

Vinegar operations. Fleischmann’s Vinegar, one of the world’s largest producers of food-grade industrial vinegar, was also included in the food and ingredients segment until its sale on November 27, 2018.

Partnership Segment

Our partnership segment provides fuel storage and transportation services through (i) 31 ethanol storage facilities located at or near our 12 operational ethanol production plants and one non-operational ethanol production plant, (ii) six fuel terminal facilities located near major rail lines, and (iii) a leased railcar fleet and other transportation assets.

Transportation and Delivery. Most of our ethanol plants are situated near major highways or rail lines to ensure efficient movement. We are able to move product from our ethanol plants to bulk terminals via truck, railcar or barge. We also manage the logistics and transportation requirements of our customers to improve our fleet’s efficiency and reduce operating costs.

Deliveries within 150 miles of our plants and the partnership’s fuel terminal facilities are generally transported by truck. Deliveries to distant markets are shipped using major U.S. rail carriers that can switch cars to other major railroads, allowing our plants to ship product throughout the United States.

To meet the challenge of marketing ethanol and distillers grains to diverse market segments, several of our plants are capable of simultaneously handling more than 150 railcars. Some of our locations have large loop tracks with unit train loading capabilities for both ethanol and dried distillers grains and spurs to connect the loop to the mainline or allow the movement and storage of railcars on site.

As of December 31, 2020, the partnership’s leased railcar fleet consisted of approximately 2,480 railcars with an aggregate capacity of 74.4 mmg. We expect the partnership’s railcar volumetric capacity to fluctuate over the normal course of business as the existing railcar leases expire and we enter into or acquire new railcar leases.

To optimize the partnership’s railcar assets, we transport products other than ethanol depending on market opportunities and have used a portion of our railcar fleet to transport crude oil for third parties and to lease railcars to other users.

Terminal and Distribution Services. Ethanol is transported from the partnership’s terminals to third-party terminal racks where it is blended with gasoline and transferred to the loading rack for delivery by truck to retail gas stations. The partnership owns and operates fuel holding tanks and terminals, and provides terminal services and logistics solutions to markets that do not have efficient access to renewable fuels. The partnership owns and operates fuel terminals at six locations in five states with combined storage capacity of approximately 7.2 mmg and throughput capacity of approximately 726 mmgy. We also have 31 ethanol storage facilities located at or near our 12 operational ethanol production plants and one non-operational ethanol production plant with a combined storage capacity of approximately 27.5 mmg to support current ethanol production capacity of approximately 1.0 bgy.

Facility Location	Storage Capacity (thousands of gallons)
Fuel Terminals	
Birmingham, Alabama - Unit Train Terminal	6,542
Other Fuel Terminal Facilities [1]	690
Ethanol Plants	
Atkinson, Nebraska [2]	2,074
Central City, Nebraska	2,250
Fairmont, Minnesota	3,124
Hopewell, Virginia [3]	761
Madison, Illinois	2,855
Mount Vernon, Indiana	2,855
Obion, Tennessee	3,000
Ord, Nebraska	1,550
Otter Tail, Minnesota	2,000
Shenandoah, Iowa	1,524
Superior, Iowa	1,238
Wood River, Nebraska	3,124
York, Nebraska	1,100
Total	34,687

(1) Represents five fuel terminals located in Alabama, Louisiana, Mississippi, Kentucky and Oklahoma.
(2) The ethanol storage facilities are located approximately 16 miles from the ethanol plant.
(3) Production at the Hopewell, Virginia facility ceased during the fourth quarter of 2018, however the storage and terminal assets remain in operating condition.

For more information about our segments, refer to *Item 7. - Management's Discussion and Analysis of Financial Condition and Results of Operations* in this report.

Our Competition

Domestic Ethanol Competitors

We are one of the largest consolidated owners' of ethanol plants in the United States. We compete with other domestic ethanol producers in a highly fragmented industry. Our competitors also include plants owned by farmers, cooperatives, oil refiners and retail fuel operators. These competitors may continue to operate their plants even when market conditions are not favorable due to the benefits realized from their other operations.

As of December 31, 2020, the top five producers operated 69 plants and accounted for approximately 40% of the domestic production capacity with production capacities ranging from 800 mmgy to 1,800 mmgy. Approximately half of the 209 plants in the United States are standalone facilities and accounted for approximately 38% of domestic production capacity.

Demand for corn from ethanol plants and other corn consumers exists in all areas and regions in which we operate. According to the Renewable Fuels Association, there were 107 operational plants in the states where we have production facilities, including Illinois, Indiana, Iowa, Minnesota, Nebraska, and Tennessee, as of December 31, 2020. The largest concentration of operational plants is located in Iowa, Nebraska and Illinois, where 51% of all operational production capacity is located.

Foreign Ethanol Competitors

We also compete globally with production from other countries. Brazil is the second largest ethanol producer in the world after the United States. Brazil primarily produces ethanol made from sugarcane, which may be less expensive to produce than ethanol made from corn depending on feedstock prices. Under RFS II, certain parties are obligated to meet an advanced biofuel standard. In recent years, sugarcane ethanol imported from Brazil has been one of the most economical means for obligated parties to meet this standard. Any significant additional ethanol production capacity could create excess supply in world markets, resulting in lower ethanol prices throughout the world, including the United States.

Other Competition

Alternative fuels, gasoline oxygenates and ethanol production methods are continually under development. Ethanol production technologies also continue to evolve. We expect changes to occur primarily in the area of cellulosic ethanol, which is made from biomass such as switch grass or fast-growing poplar trees. Since all of our plants are designed as single-feedstock facilities, adapting our plants for a different feedstock or process system would require additional capital investments and retooling which could be cost prohibitive.

Regulatory Matters

Government Ethanol Programs and Policies

We are sensitive to government programs and policies that affect the supply and demand for ethanol and other fuels, which in turn may impact the volume of ethanol and other fuels we handle. In the United States, the federal government mandates the use of renewable fuels under the RFS II. The EPA assigns individual refiners, blenders and importers the volume of renewable fuels they are obligated to blend into the fuel supply each year based on their percentage of total fuel sales. The EPA has the authority to waive the mandates in whole or in part if there is inadequate domestic renewable fuel supply, if the requirement severely harms the environment, or harms the economy of the nation or a state. The RFS II sets a floor for ethanol usage in the United States. When the RFS II was established in 2010, the required volume of "conventional" or corn-based ethanol to be blended with gasoline was to increase each year until it reached 15.0 billion gallons in 2015, which left the EPA to address existing limitations in both supply and demand. The EPA has not yet released a draft RVO rule for the 2021 volumes, despite the fact they typically release a draft mid-year and finalize the rule by November 30 each year. It is unclear when they will release the RVO for 2021.

According to the RFS II, if mandatory renewable fuel volumes are reduced by at least 20% for two consecutive years, the EPA is required to modify, or reset, statutory volumes through 2022 – the year through which the statutorily prescribed volumes run. While conventional ethanol maintained 15 billion gallons, 2019 was the second consecutive year that the total proposed RVO was more than 20% below the statutory volumes levels. Thus, the EPA was expected to initiate a reset rulemaking, and modify statutory volumes through 2022, and do so based on the same factors they are to use in setting the RVOs post-2022. These factors include environmental impact, domestic energy security, expected production, infrastructure impact, consumer costs, job creation, price of agricultural commodities, food prices, and rural economic development. In late 2019, the EPA announced it would not be moving forward with a reset rulemaking in 2020, however it is currently unclear if or when they will propose a reset rulemaking.

Under the RFS, RINs and SREs are important tools impacting supply and demand. The EPA assigns individual refiners, blenders, and importers the volume of renewable fuels they are obligated to use based on their percentage of total domestic transportation fuel sales. Obligated parties use RINs to show compliance with the RFS II mandated volumes. Ethanol producers assign RINs to renewable fuels and the RINs are detached when the renewable fuel is blended with transportation fuel domestically. Market participants can trade the detached RINs in the open market. The market price of detached RINs affects the price of ethanol in certain markets and can influence purchasing decisions by obligated parties. As it relates to SREs, a small refinery is defined as one that processes fewer than 75,000 barrels of petroleum per day. Small refineries can petition the EPA for a SRE which, if approved, waives their portion of the annual RVO requirements. The EPA, through consultation with the DOE and the USDA can grant a full or partial waiver, or deny it outright within 90 days of submittal. The EPA granted significantly more of these waivers for the 2016, 2017 and 2018 reporting years than they had in prior years, totaling 790 mmg of waived requirements for the 2016 compliance year, 1.82 billion gallons for 2017 and 1.43 billion gallons for 2018. In doing so, the EPA effectively reduced the RFS II mandated volumes for those compliance years by those amounts respectively, and as a result, RIN values declined significantly.

Biofuels groups have filed a lawsuit in the Court of Appeals for the D.C. Circuit, challenging the 2019 RVO rule over the EPA's failure to address small refinery exemptions in the rulemaking. This was the first RFS II rulemaking since the expanded use of the exemptions came to light; however, the EPA had declined to cap the number of waivers it grants, and until late 2019, had declined to alter how it accounts for the retroactive waivers in its annual volume calculations. The EPA has a statutory mandate to ensure the volume requirements are met, which are achieved by setting the percentage standards for obligated parties. We believe the EPA's recent approach accomplished the opposite in that even if all the obligated parties complied with their respective percentage obligations for 2019, the nation's overall supply of renewable fuel would not meet the total volume requirements set by the EPA. This undermines Congressional intent to increase the consumption of renewable fuels in the domestic transportation fuel supply. Biofuels groups have argued the EPA must therefore adjust its percentage standard calculations to make up for past retroactive waivers and adjust the standards to account for any waivers it reasonably expects to grant in the future.

In 2019, in a supplemental rulemaking to the 2020 RVO rule, the EPA changed their approach, and for the first time accounted for the gallons that they anticipate will be waived from the blending requirements due to small refinery exemptions. To accomplish this, they added in the trailing three year average of gallons the DOE recommended be waived, in effect raising the blending volumes across the board in anticipation of waiving the obligations in whole or in part for certain refineries that qualify for the exemptions. Though the EPA has often disregarded the recommendations of the DOE in years past, they stated in the rule their intent to adhere to these recommendations going forward, including granting partial waivers rather than an all or nothing approach. The EPA will be adjudicating the 2020 compliance year small refinery exemption applications in early 2021, and have indicated they will also adhere to the DOE recommendations for the 2019 compliance year applications.

In January 2020, the U.S. Court of Appeals for the 10th Circuit ruled on RFA et. al. vs. EPA in favor of biofuels interests, overturning EPA's granting of refinery exemptions to three refineries on two separate grounds. The Court agreed that, under the Clean Air Act, refineries are eligible for SREs for a given RVO year only if such exemptions are extensions of exemptions granted in previous RVO years. In this case, the three refineries at issue did not qualify for SREs in the year prior to the year that EPA granted them. They were thus ineligible for additional SRE relief because there were no immediately prior SREs to extend. In addition, the Court agreed that the disproportionate economic hardship prong of SRE eligibility should be determined solely by reference to whether compliance with the RFS II creates such hardship, not whether compliance plus other issues create disproportionate economic hardship. The Court thus vacated EPA's grant of SREs for certain years and remanded the grants back to EPA. The refiners appealed for a rehearing which was denied. Two of the refiners appealed the decision to the U.S. Supreme Court and in January 2021, the Supreme Court announced they would hear the case. If the decision against the EPA is upheld by the Supreme Court, it is uncertain how the EPA will propose to remedy the situation.

In light of the 10th Circuit ruling, a number of refineries have applied for "gap year" SREs in an effort to establish a continuous string of relief and to ensure they are able to qualify for SREs going forward. A total of 64 gap year requests were filed with the EPA and reviewed by the DOE. In September 2020 the EPA announced that they were denying 54 of the gap year requests that had been scored and returned by DOE, regardless of how they had been scored. Without a string of continuous SRE approvals, almost no small refinery would be eligible to apply for hardship relief in this manner, unless the Supreme Court overturns the 10th Circuit ruling, which we believe is unlikely.

To respond to the COVID-19 health crisis and attempt to offset the subsequent economic damage, Congress passed multiple relief measures, most notably the CARES Act in March 2020, which created and funded multiple programs that have impacted our industry. The USDA was given additional resources for the Commodity Credit Corporation (CCC) and they are using those funds to provide direct payments to farmers, including corn farmers from whom we purchase most of our feedstock for ethanol production. Similar to the trade aid payments made by the USDA over the past two years, this cash injection for farmers could cause them to delay marketing decisions and increase the price we have to pay to purchase corn. The CARES Act also allowed for certain net operating loss carrybacks, which has allowed us to receive certain tax refunds. In December 2020, Congress passed and President Trump signed into law an annual spending package coupled with another COVID relief bill which included additional funds for the Secretary of Agriculture to distribute to those impacted by the pandemic. The language of the bill specifically includes biofuels producers as eligible for some of this aid.

The CARES Act provided a tax exclusion on the shipment of un-denatured ethanol for use in manufacturing hand sanitizer, a key ingredient of which is undenatured ethanol of specific grades. The FDA has also provided expanded guidance to allow for more denaturants to be used in ethanol intended for hand sanitizer production, and has expanded the grades of ethanol allowed for the duration of the public health crisis.

See further discussion in *Item 7 – Management's Discussion and Analysis of Financial Condition and Results of Operations*.

Environmental and Other Regulation

Our ethanol production, agribusiness and energy services, food and ingredients, and partnership segment activities are subject to various and extensive environmental and other regulations. We obtain and maintain various environmental permits to operate our plants and other facilities. Ethanol production involves the emission of various airborne pollutants, including particulate, carbon dioxide, oxides of nitrogen, hazardous air pollutants and volatile organic compounds. In 2007, the U.S. Supreme Court classified carbon dioxide as an air pollutant under the Clean Air Act in a case seeking to require the EPA to regulate carbon dioxide in vehicle emissions, which the EPA later addressed in RFS II. While some of our plants operate as grandfathered at their current authorized capacity under the RFS II mandate, expansion above these capacities at grandfathered plants will require a 20% reduction in greenhouse gas emissions from a 2005 baseline measurement.

In addition, various states and countries are adopting regulatory schemes similar to what California has adopted. Specifically, CARB adopted LCFS requiring a 10% reduction in average carbon intensity of gasoline and diesel transportation fuels in California from 2010 to 2020. After a series of rulings that temporarily prevented CARB from enforcing these regulations, the State of California Office of Administrative Law approved the LCFS in November 2012, and revised LCFS regulations took effect in January 2013.

We employ maintenance and operations personnel at each of our plants. In addition to the attention we place on the health and safety of our employees, the operations of our facilities are regulated by the Occupational Safety and Health Administration.

See further discussion in *Item 7 – Management's Discussion and Analysis of Financial Condition and Results of Operations*.

Exclusive Partnerships and Joint Ventures

In 2020, we acquired a majority interest in Fluid Quip Technologies, LLC. The acquisition capitalizes on the core strengths of each company to develop and implement proven, value-added agriculture, food and industrial biotechnology systems and rapidly expand installation and production of Ultra-High Protein technology across our facilities, as well as offer these technologies to partnering biofuel facilities.

In 2020, we formed an exclusive partnership with Hayashikane Sangyo of Japan, one of the oldest and most successful integrated aquafeed companies in the world. The companies have come together to deliver innovative solutions for fast-growing global aquaculture markets using technology developed and successfully deployed in Japanese production. These technologies complement our Ultra-High Protein production capabilities.

In 2019, we joined with Novozymes in an exclusive venture to produce higher purity protein and protein meals with nutritional and other feed benefits through non-mechanical methods.

In July 2018, we formed Optimal Aquafeed, a 50/50 joint venture to produce high-quality aquaculture feeds utilizing proprietary techniques and high-protein feed ingredients. The joint venture brings together Green Plains' production capabilities, commodity expertise, and infrastructure and combines that with Optimal Fish Food LLC's intellectual property, industry expertise and customer relationships. We purchased the remaining 50% interest in Optimal Aquafeed in February 2020 and now own 100% of Optimal Aquafeed.

We are the majority owner of the BioProcess Algae joint venture, which was formed in 2008. The joint venture is focused on growing algae in commercially viable quantities using feedstocks that are created as part of our ethanol production process. We are currently focused on animal nutrition, using proprietary technology to customize specific products, based on proven benefits, for relevant markets.

In 2019, we formed the GPCC joint venture with TGAM and StepStone. GPCC has the capacity to support 355,000 head of cattle and has approximately 24.1 million bushels of grain storage capacity. In October 2020, we disposed of our remaining 50% interest in GPCC.

Human Capital Resources

The attraction, retention and development of employees is critical to our success. We accomplish this, in part, by our competitive compensation practices, training initiatives, and growth opportunities within the company. On December 31, 2020, we had 839 full-time, part-time, temporary and seasonal employees, including 122 employees at our corporate office in Omaha, Nebraska.

Workforce Health and Safety

We take workplace safety very seriously and our robust safety program means that we are constantly evaluating our safety protocols in an effort to keep our facilities safe for our workers.

Throughout the COVID-19 pandemic, we have remained focused on protecting the health and safety of our team members while meeting the needs of our customers. Shortly after the outset of COVID-19, we were an early adopter of enhanced safety measures and practices across our facilities to protect employee health and safety and ensure a reliable supply of products to our customers. This included the purchasing of masks, temperature check machines and hand sanitizer

at all locations. We donated industrial-grade alcohol, which can be used as an ingredient for sanitation products, to both the State of Nebraska and the State of Iowa, as well as the University of Nebraska. Additionally, all employees were provided with a twenty pound package of frozen ground beef at the start of the COVID-19 pandemic.

We monitor and track the impact of the pandemic on our teammates and within our operations, and proactively modify or adopt new practices to promote their health and safety.

Compensation and Benefits

As part of our compensation philosophy, we believe that we must offer and maintain market competitive compensation and benefit programs for our employees in order to attract and retain superior talent. In addition to competitive base wages, additional programs include the 2019 Equity Incentive Plan, a company matched 401(k) Plan, healthcare and insurance benefits, flexible spending accounts, paid time off, family leave, and employee assistance programs.

Diversity and Inclusion

We are committed to our continued efforts to increase diversity and foster an inclusive work environment that supports the workforce and the communities we serve. We recruit the best qualified employees regardless of gender, ethnicity or other protected traits and it is our policy to fully comply with all laws applicable to discrimination in the workplace.

Available Information

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports are available on our website at *www.gpreinc.com* shortly after we file or furnish the information with the SEC. You can also find the charters of our audit, compensation and nominating committees, as well as our code of ethics in the corporate governance section of our website. The information found on our website is not part of this or any other report we file with or furnish to the SEC. For more information on our partnership, please visit *www.greenplainspartners.com*. Alternatively, investors may visit the SEC website at *www.sec.gov* to access our reports, proxy and information statements filed with the SEC.

Item 1A. Risk Factors.

We operate in an industry that has numerous risks, many of which are beyond our control or are driven by factors that cannot always be predicted. Investors should carefully consider all of the risk factors in conjunction with the other information included in this report as our financial results and condition or market value could be adversely affected if any of these risks were to occur.

Risks Related to our Business and Industry

Our margins are dependent on managing the spread between the price of corn, natural gas, ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil.

Our operating results are highly sensitive to commodity prices, including the spread between the corn and natural gas we purchase, and the ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil we sell. Price and supply are subject to various market forces, such as weather, domestic and global demand, shortages, export prices, crude oil prices, currency valuations and government policies in the United States and around the world, over which we have no control. Price volatility of these commodities may cause our operating results to fluctuate substantially. Increases in corn or natural gas prices or decreases in ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil prices may make it unprofitable to operate. No assurance can be given that we will purchase corn and natural gas or sell ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil at or near prices which would provide us with positive margins. Consequently, our results of operations and financial position may be adversely affected by increases in corn or natural gas prices or decreases in ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil prices.

We continuously monitor the margins at our ethanol plants using a variety of risk management tools and hedging strategies, when appropriate. In recent years, the spread between ethanol and corn prices has fluctuated widely, narrowed significantly and been negative at times. Fluctuations are likely to continue. A sustained narrow spread or further reduction in the spread between ethanol and corn prices as a result of increased corn prices or decreased ethanol prices, would adversely affect our results of operations and financial position. Should our combined revenue from ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil fall below our cost of production, we could decide to slow or

suspend production at some or all of our ethanol plants, which also could adversely affect our results of operations and financial position.

The commodities we buy and sell are subject to price volatility and uncertainty.

Corn. We are generally unable to pass increased corn costs to our customers since ethanol competes with other fuels. At certain corn prices, ethanol may be uneconomical to produce. Ethanol plants, livestock industries and other corn-consuming enterprises put significant price pressure on local corn markets. In addition, local corn supplies and prices could be adversely affected by prices for alternative crops, increasing input costs, changes in government policies, shifts in global markets or damaging growing conditions, such as plant disease or adverse weather, including drought.

Ethanol. Our revenues are dependent on market prices for ethanol which can be volatile as a result of a number of factors, including: the price and availability of competing fuels; the overall supply and demand for ethanol and corn; the price of gasoline, crude oil and corn; and government policies.

Ethanol is marketed as a fuel additive that reduces vehicle emissions, an economical source of octanes and, to a lesser extent, a gasoline substitute. Consequently, gasoline supply and demand affect the price of ethanol. Should gasoline prices or demand decrease significantly, our results of operations could be materially impacted.

Ethanol imports also affect domestic supply and demand. Imported ethanol is not subject to an import tariff and, under the RFS II, sugarcane ethanol from Brazil is one of the most economical means for obligated parties to meet the advanced biofuel standard.

Industrial-grade alcohol is produced by further distillation processing of the 200-proof alcohol. Further distillation removes impurities from fuel-grade ethanol to allow for production of industrial-grade alcohol which can be used as an ingredient for sanitation products. Should industrial-grade alcohol prices or demand decrease significantly, our results of operations could be negatively impacted.

Distillers Grains. Increased U.S. dry mill ethanol production has resulted in increased distillers grains production. Should this trend continue, distillers grains prices could fall unless demand increases or other market sources are found. The price of distillers grains has historically been correlated with the price of corn. Occasionally, the price of distillers grains will lag behind fluctuations in corn or other feedstock prices, lowering our cost recovery percentage. Additionally, exports of distiller grains could be impacted by the enactment of foreign policy.

Distillers grains compete with other protein-based animal feed products. Downward pressure on other commodity prices, such as corn and soybeans, will generally cause the price of competing animal feed products to decline, resulting in downward pressure on the price of distillers grains.

Natural Gas. The price and availability of natural gas are subject to volatile market conditions. These market conditions are often affected by factors beyond our control, such as weather, drilling economics, overall economic conditions and government regulations. Significant disruptions in natural gas supply could impair our ability to produce ethanol. Furthermore, increases in natural gas price or changes in our cost relative to our competitors cannot be passed on to our customers which may adversely affect our results of operations and financial position.

Corn Oil. Industrial corn oil is generally marketed as a renewable diesel and biodiesel feedstock; therefore, the price of corn oil is affected by demand for renewable diesel and biodiesel. Expanded profitability in the renewable diesel and biodiesel industry due to the extended blending tax credit and low carbon fuels standards could impact corn oil demand. In general, corn oil prices follow the prices of heating oil and soybean oil. Decreases in the price of corn oil could have an unfavorable impact on our business.

Our risk management and commodity trading strategies could be ineffective and expose us to decreased liquidity.

As market conditions warrant, we use forward contracts to sell some of our ethanol, distillers grains, Ultra-High Protein, and corn oil, or buy some of the corn, and natural gas we need to partially offset commodity price volatility. We also engage in other hedging transactions and other commodity trading involving exchange-traded futures contracts for corn, natural gas, ethanol, soybean meal and other agricultural commodities. The financial impact of these activities depends on the price of the commodities involved and/or our ability to physically receive or deliver the commodities.

Hedging arrangements expose us to risk of financial loss when the counterparty defaults on its contract or, in the case of exchange-traded contracts, when the expected differential between the price of the underlying and physical commodity

changes. Hedging activities can result in losses when a position is purchased in a declining market or sold in a rising market. Hedging losses may be offset by a decreased cash price for corn, and natural gas and an increased cash price for ethanol, distillers grains, Ultra-High Protein and corn oil. We vary the amount of hedging and other risk mitigation strategies we undertake and sometimes choose not to engage in hedging transactions at all. We cannot provide assurance that our risk management and commodity trading strategies and decisions will be profitable or effectively offset commodity price volatility. If they are not our results of operations and financial position may be adversely affected.

The use of derivative financial instruments frequently involves cash deposits with brokers, or margin calls. Sudden changes in commodity prices may require additional cash deposits immediately. Depending on our open derivative positions, we may need additional liquidity with little advance notice to cover margin calls. While we continuously monitor our exposure to margin calls, we cannot guarantee we will be able to maintain adequate liquidity to cover margin calls in the future.

Government mandates affecting ethanol could change and impact the ethanol market.

Under the provisions of the Energy Independence and Security Act (EISA), Congress expanded the Renewable Fuel Standard (RFS II). The RFS II mandated the minimum volume of renewable fuels that must be blended into the transportation fuel supply which affects the domestic market for ethanol and each year, the Environmental Protection Agency (EPA) undertakes rulemaking to set the Renewable Volume Obligation (RVO) for the following year. Further, the EPA has the authority to waive the requirements, in whole or in part, if there is inadequate domestic renewable fuel supply or the requirement severely harms the economy or the environment. After 2022, volumes shall be determined by the EPA in coordination with the Secretaries of Energy and Agriculture, taking into account such factors as impact on environment, energy security, future rates of production, cost to consumers, infrastructure, and other factors such as impact on commodity prices, job creation, rural economic development, or impact on food prices. However, on December 19, 2019, the EPA announced it would not be moving forward with a reset rulemaking in 2020. It is unclear when or if they will propose a reset rulemaking. Volumes can also be impacted as small refineries can petition the EPA for a SRE which, if approved, waives their portion of the annual RVO requirements. The EPA, through consultation with the DOE and the USDA can grant them a full or partial waiver, or deny it outright within 90 days of submittal. A small refinery is defined as one that processes fewer than 75,000 barrels of petroleum per day.

Our operations could be adversely impacted by legislation, administration actions, EPA actions, or lawsuits, that may reduce the RFS II mandated volumes of conventional ethanol and other biofuels through the annual RVO, the 2022 reset rulemaking, the point of obligation for blending, or small refinery exemptions. A number of lawsuits are pending involving the RVO, the point of obligation and small refinery exemptions. Similarly, should federal mandates regarding oxygenated gasoline be repealed, the market for domestic ethanol could be adversely impacted. Economic incentives to blend based on the relative value of gasoline versus ethanol, taking into consideration the octane value of ethanol, environmental requirements and the RFS II mandate, may affect future demand. A significant increase in supply beyond the RFS II mandate could have an adverse impact on ethanol prices. Moreover, changes to RFS II could negatively impact the price of ethanol or cause imported sugarcane ethanol to become more economical than domestic ethanol. Likewise state and regional low carbon fuel standards (LCFS) like that of California could be favorable or harmful to conventional ethanol, depending on how it is crafted.

Future demand may be influenced by economic incentives to blend based on the relative value of gasoline versus ethanol, taking into consideration the octane value of ethanol, environmental requirements and the value of RFS II credits or Renewable Identification Numbers (RINs). A significant increase in supply beyond the RFS II mandate could have an adverse impact on ethanol prices. Moreover, any changes to RFS II, whether by legislation, EPA action or lawsuit, originating from issues associated with the market price of RINs could negatively impact the demand for ethanol, discretionary blending of ethanol and/or the price of ethanol. Recent actions by the EPA to grant small refiner exemptions without accounting for the lost gallons has resulted in lower RIN prices.

Flexible-fuel vehicles (FFVs), which are designed to run on a mixture of fuels, including higher blends of ethanol such as E85, receive preferential treatment to meet corporate average fuel economy (CAFE) standards in the form of CAFE credits. There are approximately 21 million FFVs on the road in the U.S. today, 16 million of which are light duty trucks. FFV credits have been decreasing since 2014 and will be completely phased out in 2020. Absent CAFE preferences, auto manufacturers may not be willing to build flexible-fuel vehicles, which has the potential to slow the growth of E85 markets.

To the extent federal or state laws or regulations are modified and/or enacted, it may result in the demand for ethanol being reduced, which could negatively and materially affect our financial performance.

Future demand for ethanol is uncertain and changes in public perception, consumer acceptance and overall consumer demand for transportation fuel could affect demand.

While many trade groups, academics and government agencies support ethanol as a fuel additive that promotes a cleaner environment, others claim ethanol production consumes considerably more energy, emits more greenhouse gases than other fuels and depletes water resources. While we do not agree, some studies suggest ethanol produced from corn is less efficient than ethanol produced from switch grass or wheat grain. Others claim corn-based ethanol negatively impacts consumers by causing the prices of meat and other food derived from corn-consuming livestock to increase. Ethanol critics also contend the industry redirects corn supplies from international food markets to domestic fuel markets, and contributes to land use change domestically and abroad.

There are limited markets for ethanol beyond the federal mandates. We believe further consumer acceptance of E15 and E85 fuels may be necessary before ethanol can achieve significant market share growth. Discretionary and E85 blending are important secondary markets. Discretionary blending is often determined by the price of ethanol relative to gasoline, and availability to consumers. When discretionary blending is financially unattractive, the demand for ethanol may be reduced.

Demand for ethanol is also affected by overall demand for transportation fuel, which is affected by cost, number of miles traveled and vehicle fuel economy. Miles traveled typically increases during the spring and summer months related to vacation travel, followed closely behind the fall season due to holiday travel. Global events, such as COVID-19, have greatly decreased miles traveled and in turn, the demand for ethanol. Consumer demand for gasoline may be impacted by emerging transportation trends, such as electric vehicles or ride sharing. In January 2021, General Motors announced a target date of 2035 for phasing out the production of gasoline and diesel powered vehicles. Similarly, Nissan has stated that their entire fleet will be electric vehicles by the early 2030s. These announcements coincide with pledges to ban the sale of internal combustion engines in countries such as Japan and the United Kingdom by 2035, as well as a statewide ban in California. While aspirational, if realized these bans would accelerate the decline of liquid fuel demand and by extension demand for ethanol, biodiesel and renewable diesel.

Additionally, factors such as over-supply of ethanol, which has been the case for some time, could continue to negatively impact our business. Reduced demand for ethanol may depress the value of our products, erode its margins, and reduce our ability to generate revenue or operate profitably.

Our business is directly affected by the supply and demand for ethanol and other fuels in the markets served by our assets. Reduced demand for ethanol, regardless of cause, may erode our margins and reduce our ability to generate revenue and operate profitably.

In the past, we have had operating losses and could incur future operating losses.

In the last five years, we incurred operating losses during certain quarters and could incur operating losses in the future that are substantial. Although we have had periods of sustained profitability, we may not be able to maintain or increase profitability on a quarterly or annual basis, which could impact the market price of our common stock and the value of your investment.

If the United States were to withdraw from or materially modify certain international trade agreements, our business, financial condition and results of operations could be materially adversely affected.

Ethanol and other products that we produce are or have been exported to Canada, Mexico, Brazil, China and other countries. The previous administration expressed antipathy towards certain existing international trade agreements and has significantly increased tariffs on goods imported into the United States, which in turn has led to retaliatory actions on U.S. exports. The current trade situation, the outcome of trade negotiations or lack thereof, has had and/or may continue to have a material effect on our business, financial condition and results of operations.

Our ability to access the partnership's terminals adjacent to our ethanol plants could cause disruptions in our operations and adversely affect our production levels, profitability and needed capital expenditures.

We are party to the storage and throughput agreement with our partnership, under which we access the storage and throughput services offered by the partnership. In the event of a default by either party under that agreement, our ability to throughput our ethanol may be disrupted, which in turn could adversely affect our production levels, operating expenses, profitability and our need for capital expenditures for alternative throughput arrangements.

Our debt exposes us to numerous risks that could have significant consequences to our shareholders.

Risks related to the level of debt we have include: (1) requiring a sizeable portion of cash to be dedicated for debt service, reducing the availability of cash flow for working capital, capital expenditures, and other general business activities and limiting our ability to invest in new growth opportunities; (2) limiting our ability to obtain additional financing for working capital, capital expenditures, acquisitions and other activities; (3) limiting our flexibility to plan for or react to changes in the businesses and industries in which we operate; (4) increasing our vulnerability to general and industry-specific adverse economic conditions; (5) being at a competitive disadvantage against less leveraged competitors; and (6) being vulnerable to increases in prevailing interest rates.

Most of our debt bears interest at variable rates, which creates exposure to interest rate risk. If interest rates increase, our debt service obligations at variable rates would increase even though the amount borrowed remained the same, decreasing net income.

Our ability to make scheduled payments on or to refinance our debt obligations and to fund our planned capital expenditures, acquisitions and other ongoing liquidity needs depends on our financial condition and operating performance, which are subject to prevailing economic and competitive conditions as well as certain financial, business and other factors which are beyond our control. There can be no assurance that we will maintain a level of cash flow from operating activities in an amount sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness. If our cash flow and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay investments and capital expenditures, or to seek additional capital or restructure our indebtedness. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. In the absence of such operating results and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations.

We are required to comply with a number of covenants under our existing loan agreements that could hinder our growth.

We are required to maintain specified financial ratios, including minimum cash flow coverage, working capital and tangible net worth under certain loan agreements. A breach of these covenants could result in default, and if such default is not cured or waived, our lenders could accelerate our debt and declare it immediately due and payable. If this occurs, we may not be able to repay or borrow sufficient funds to refinance the debt. Even if financing is available, it may not be on acceptable terms. No assurance can be given that our future operating results will be sufficient to comply with these covenants or remedy default.

In the past, we have received waivers from our lenders for failure to meet certain financial covenants and amended our loan agreements to change these covenants. In the event we are unable to comply with these covenants in the future, we cannot provide assurance that we will be able to obtain the necessary waivers or amend our loan agreements to prevent default. Under our convertible senior notes, default on any loan in excess of $10.0 million could result in the notes being declared due and payable, which would have a material and adverse effect on our ability to operate.

We operate in a capital intensive business and rely on cash generated from operations and external financing, which could be limited.

Increased commodity prices could increase liquidity requirements. Our operating cash flow is dependent on overall commodity market conditions as well as our ability to operate profitably. In addition, we may need to raise additional financing to fund growth. In some market environments, we may have limited access to incremental financing, which could defer or cancel growth projects, reduce business activity or cause us to default on our existing debt agreements if we are unable to meet our payment schedules. These events could have an adverse effect on our operations and financial position.

Our ability to repay current and anticipated future debt will depend on our financial and operating performance and successful implementation of our business strategies. Our financial and operational performance will depend on numerous factors including prevailing economic conditions, commodity prices, and financial, business and other factors beyond our control. If we cannot repay, refinance or extend our current debt at scheduled maturity dates, we could be forced to reduce or delay capital expenditures, sell assets, restructure our debt or seek additional capital. If we are unable to restructure our debt or raise funds, our operations and growth plans could be harmed and the value of our stock could be significantly reduced.

Disruptions in the credit market could limit our access to capital.

We may need additional capital to fund our growth or other business activities in the future. The cost of capital under our existing or future financing arrangements could increase and affect our ability to trade with various commercial counterparties or cause our counterparties to require additional forms of credit support. If capital markets are disrupted, we may not be able to access capital at all or capital may only be available under less favorable terms.

We are required to continue to make payments to the partnership to the minimum volume commitment regardless of our production levels.

We are party to the storage and throughput agreement with our partnership, under which we are obligated to pay a minimum volume commitment regardless of whether or not we operate. We may not run our plants at volumes sufficient enough to cover the MVC resulting in payments being made to the partnership. In times of sustained negative margins, our volumes may be insufficient to recover these MVC payments in the following four quarters as outlined in the partnership agreement.

Our ability to maintain the required regulatory permits or manage changes in environmental, safety and TTB regulations is essential to successfully operating our plants.

Our plants are subject to extensive air, water, environmental and TTB regulations. Our production facilities involve the emission of various airborne pollutants, including particulate, carbon dioxide, nitrogen oxides, hazardous air pollutants and volatile organic compounds, which requires numerous environmental permits to operate our plants. Governing state agencies could impose costly conditions or restrictions that are detrimental to our profitability and have a material adverse effect on our operations, cash flows and financial position.

Environmental laws and regulations at the federal and state level are subject to change. These changes can also be made retroactively. It is possible that more stringent federal or state environmental rules or regulations could be adopted, which could increase our operating costs and expenses. Consequently, even though we currently have the proper permits, we may be required to invest or spend considerable resources in order to comply with future environmental regulations. Furthermore, ongoing plant operations, which are governed by the Occupational Safety and Health Administration, may change in a way that increases the cost of plant operations. Any of these events could have a material adverse effect on our operations, cash flows and financial position.

Part of our business is regulated by environmental laws and regulations governing the labeling, use, storage, discharge and disposal of hazardous materials. Since we handle and use hazardous substances, changes in environmental requirements or an unanticipated significant adverse environmental event could have a negative impact on our business. While we strive to comply with all environmental requirements, we cannot provide assurance that we have been in compliance at all times or will not incur material costs or liabilities in connection with these requirements. Private parties, including current and former employees, could bring personal injury or other claims against us due to the presence of hazardous substances. We are also exposed to residual risk by our land and facilities which may have environmental liabilities from prior use. Changes in environmental regulations may require us to modify existing plant and processing facilities, which could significantly increase our cost of operations.

TTB regulations apply when producing our undenatured ethanol. These regulations carry substantial penalties for non-compliance and therefore any non-compliance may adversely affect our financial operations or adversely impact our ability to produce undenatured ethanol.

Any inability to generate or obtain RINs could adversely affect our operating margins.

Nearly all of our ethanol production is sold with RINs that are used by our customers to comply with the RFS II. Should our production not meet the EPA's requirements for RIN generation in the future, we would need to purchase RINs in the open market or sell our ethanol at lower prices to compensate for the absence of RINs. The price of RINs depends on a variety of factors, including the availability of qualifying biofuels and RINs for purchase, production levels of transportation fuel and percentage mix of ethanol with other fuels, and cannot be predicted. Failure to obtain sufficient RINs or reliance on invalid RINs could subject us to fines and penalties imposed by the EPA which could adversely affect our results of operations, cash flows and financial condition.

As we trade ethanol acquired from third-parties, should it be discovered the RINs associated with the ethanol we purchased are invalid, albeit unknowingly, we could be subject to substantial penalties if we are assessed the maximum amount allowed by law. Prior to 2013, the EPA assessed only modest penalties for RIN violations. However, based on EPA

penalties assessed on RINS violations in the past few years, in the event of a violation, the EPA could assess penalties, which could have an adverse impact on our profitability.

Compliance with evolving environmental, health and safety laws and regulations, particularly those related to climate change, could be costly.

Our plants emit carbon dioxide as a by-product of ethanol production. In February 2010, the EPA released its final regulations on RFS II, grandfathering our plants at their current authorized capacity. While some of our plants have received efficient producer status and no longer rely on grandfathered status, for those still reliant upon it, expansion above these levels will require a 20% reduction in greenhouse gas emissions from the 2005 baseline measurement. Separately, CARB adopted a LCFS that took effect in January 2013, which requires a 10% reduction in the average carbon intensity of gasoline and diesel transportation fuels from 2010 to 2020. An ILUC component is included in the greenhouse gas emission calculation, which may have an adverse impact on the market for corn-based ethanol in California.

To expand our production capacity, federal and state regulations may require us to obtain additional permits, achieve EPA's efficient producer status under the pathway petition program, install advanced technology or reduce drying distillers grains. Compliance with future laws or regulations to decrease carbon dioxide could be costly and may prevent us from operating our plants as profitably, which may have an adverse impact on our operations, cash flows and financial position.

We may fail to realize the anticipated benefits of mergers, acquisitions, joint ventures or partnerships.

We have increased the size and diversity of our operations through mergers, acquisitions and joint ventures or partnerships and intend to continue exploring potential growth opportunities. Acquisitions involve numerous risks that could harm our business, including: (1) difficulties integrating the operations, technologies, products, existing contracts, accounting processes and personnel and realizing anticipated synergies of the combined business; (2) risks relating to environmental hazards on purchased sites; (3) risks relating to developing the necessary infrastructure for facilities or acquired sites, including access to rail networks; (4) difficulties supporting and transitioning customers; (5) diversion of financial and management resources from existing operations; (6) the purchase price exceeding the value realized; (7) risks of entering new markets or areas outside of our core competencies; (7) potential loss of key employees, customers and strategic alliances from our existing or acquired business; (8) unanticipated problems or underlying liabilities; and (9) inability to generate sufficient revenue to offset acquisition and development costs.

The anticipated benefits of these transactions may not be fully realized or could take longer to realize than expected.

We have also pursued growth through joint ventures or partnerships, which typically involve restrictions on actions that the partnership or joint venture may take without the approval of the partners. These provisions could limit our ability to manage the partnership or joint venture in a manner that serves our best interests.

Future acquisitions may involve issuing equity as payment or to finance the business or assets, which could dilute your ownership interest. Furthermore, additional debt may be necessary to complete these transactions, which could have a material adverse effect on our financial condition. Failure to adequately address the risks associated with acquisitions or joint ventures could have a material adverse effect on our business, results of operations and financial condition.

We may be affected by our portfolio optimization and total transformation strategies.

In May 2018, we announced that we were evaluating the performance of our entire portfolio of assets and businesses. As part of that process, during the fourth quarter of 2018, we sold three ethanol plants, permanently closed one ethanol plant and sold Fleischmann's Vinegar. Furthermore, we sold our 50% interest in JGP Energy Partners during the fourth quarter of 2019, we sold a 50% interest in GPCC during the third quarter of 2019 and the remaining 50% interest in GPCC during the fourth quarter of 2020, the Hereford, Texas ethanol plant in December 2020 and the recently announced sale of the Ord, Nebraska ethanol plant, which is expected to close within 45 days.

As we continue to evaluate our portfolio, we may sell additional assets or businesses or exit particular markets that are no longer a strategic fit or no longer meet their growth or profitability targets. Depending on the nature of the assets sold, our profitability may be impacted by lost operating income or cash flows from such businesses. In addition, divestitures we complete may not yield the targeted improvements in our business and may divert management's attention from our day-to-day operations. We are also undergoing a number of project initiatives to improve margins, including the Project 24 initiative and increased investment into Ultra-High Protein animal feed products, as part of our total transformation strategy. Our failure to achieve the intended financial results associated with our portfolio optimization and total transformation strategies could have an adverse effect on our business, financial condition or results of operations.

Future events could result in impairment of long-lived assets, which may result in charges that adversely affect our results of operations.

Long-lived assets, including property, plant and equipment, intangible assets, goodwill and equity method investments, are evaluated for impairment annually or whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Our impairment evaluations are sensitive to changes in key assumptions used in our analysis and may require use of financial estimates of future cash flows. Application of alternative assumptions could produce significantly different results. We may be required to recognize impairments of long-lived assets based on future economic factors such as unfavorable changes in estimated future undiscounted cash flows of an asset group.

Global competition could affect our profitability.

We compete with producers in the United States and abroad. Depending on feedstock, labor and other production costs, producers in other countries, such as Brazil, may be able to produce ethanol cheaper than we can. Under RFS II, certain parties are obligated to meet an advanced biofuel standard. In recent years, sugarcane ethanol imported from Brazil has been one of the most economical means for obligated parties to meet this standard. While transportation costs, infrastructure constraints and demand may temper the impact of ethanol imports, foreign competition remains a risk to our business. Moreover, significant additional foreign ethanol production could create excess supply, which could result in lower ethanol prices throughout the world, including the United States. Any penetration of ethanol imports into the domestic market may have a material adverse effect on our operations, cash flows and financial position.

International activities such as boycotts, embargoes, product rejection, trade policies and compliance matters, may have an adverse effect on our results of operations.

Government actions abroad can have a significant impact on our business. In 2020, we exported 21% of our ethanol production. In 2013, the European Union imposed a five-year tariff of $83.33 per metric ton on U.S. ethanol to discourage foreign competition. Effective January 1, 2017, China indicated its intention to raise its 5% tariff on U.S. and Brazil fuel ethanol to 30%. On April 1, 2018, China raised their tariff rate to 45%, and later raised it further to 70%. In January 2020, the two countries announced a “Phase I” trade deal with agricultural commodity purchase commitments, including ethanol; however, these ethanol tariffs have not been reduced or eliminated.

Although the ethanol export markets are affected by competition from other ethanol exporters, particularly Brazil, and in spite of the actions by China, we believe exports will remain active going forward. On September 1, 2017, Brazil’s Chamber of Foreign Trade, or CAMEX, issued an official written resolution, imposing a 20% tariff on U.S. ethanol imports in excess of 150 million liters, or 39.6 million gallons per quarter. The ruling was extended for a year in 2019, and again by 90 days in 2020, but was allowed to lapse in December 2020, and a 20% duty now applies to all U.S. ethanol imports into Brazil.

In January 2016, China’s Ministry of Commerce initiated an anti-dumping investigation into U.S.-produced dried distillers grains exported to China. In January of 2017, the Ministry of Commerce of China announced it increased anti-dumping duties on U.S. distillers grains, ranging from 42.2% to 53.7%.

With more tariffs and reduced exports, the value of our products may be affected, which could have a negative impact on our profitability. Additionally, tariffs on U.S. ethanol may lead to further industry over-supply and reduce our profitability. Moreover, the America First trade position has caused more countries to toughen their positions on U.S. imports.

The ability or willingness of OPEC and other oil exporting nations to set and maintain production levels has a significant impact on oil and natural gas commodity prices.

The Organization of Petroleum Exporting Countries and their allies (collectively, OPEC+), is an intergovernmental organization that seeks to manage the price and supply of oil on the global energy market. Actions taken by OPEC+ members, including those taken alongside other oil exporting nations, have a significant impact on global oil supply and pricing. For example, OPEC+ and certain other oil exporting nations have previously agreed to take measures, including production cuts, to support crude oil prices. In March 2020, members of OPEC+ considered extending and potentially increasing these oil production cuts, however these negotiations were unsuccessful. As a result, Saudi Arabia announced an immediate reduction in export prices and Russia announced that all previously agreed oil production cuts will expire on April 1, 2020. These actions led to an immediate and steep decrease in oil prices. There can be no assurance that OPEC+ members and other oil exporting nations will agree to future production cuts or other actions to support and stabilize oil prices, nor can there be any assurance that they will not further reduce oil prices or increase production. Uncertainty regarding future actions

to be taken by OPEC+ members or other oil exporting countries could lead to increased volatility in the price of oil, which could adversely affect our business, future financial condition and results of operations.

Increased ethanol industry penetration by oil and other multinational companies could impact our margins.

We operate in a very competitive environment and compete with other domestic ethanol producers in a relatively fragmented industry. The top five producers account for approximately 40% of the domestic production capacity with production capacity ranging from 800 mmgy to 1,800 mmgy. The remaining ethanol producers consist of smaller entities engaged exclusively in ethanol production and large integrated grain companies that produce ethanol in addition to their base grain businesses. We compete for capital, labor, corn and other resources with these companies.

Until recently, oil companies, petrochemical refiners and gasoline retailers were not engaged in ethanol production even though they form the primary distribution network for ethanol blended with gasoline. Over the past decade, several oil refiners have acquired ethanol production plants, and now account for almost 1/5 of domestic ethanol production. If these companies increase their ethanol plant ownership or additional companies commence production, the need to purchase ethanol from independent producers like us could diminish and adversely effect on our operations, cash flows and financial position.

Our agribusiness operations are subject to significant government regulations.

Our agribusiness operations are regulated by various government entities that can impose significant costs on our business. Failure to comply could result in additional expenditures, fines or criminal action. Our production levels, markets and grains we merchandise are affected by federal government programs, which include USDA acreage control and price support programs. Government policies such as tariffs, duties, subsidies, import and export restrictions and embargos can also impact our business. Changes in government policies and producer support could impact the type and amount of grains planted, which could affect our ability to buy grain. Export restrictions or tariffs could limit sales opportunities outside of the United States.

Commodities futures trading is subject to extensive regulations.

The futures industry is subject to extensive regulation. Since we use exchange-traded futures contracts as part of our business, we are required to comply with a wide range of requirements imposed by the Commodity Futures Trading Commission, National Futures Association and the exchanges on which we trade. These regulatory bodies are responsible for safeguarding the integrity of the futures markets and protecting the interests of market participants. As a market participant, we are subject to regulation concerning trade practices, business conduct, reporting, position limits, record retention, the conduct of our officers and employees, and other matters.

Failure to comply with the laws, rules or regulations applicable to futures trading could have adverse consequences. Such claims could result in fines, settlements or suspended trading privileges, which could have a material adverse impact on our business, financial condition or operating results.

Our success depends on our ability to manage our growing and changing operations.

Since our formation in 2004, our business has grown significantly in size, products and complexity. This growth places substantial demands on our management, systems, internal controls, and financial and physical resources. If we acquire additional operations, we may need to further develop our financial and managerial controls and reporting systems, and could incur expenses related to hiring additional qualified personnel and expanding our information technology infrastructure. Our ability to manage growth effectively could impact our results of operations, financial position and cash flows.

Replacement technologies could make corn-based ethanol or our process technology obsolete.

Ethanol is used primarily as an octane additive and oxygenate blended with gasoline. Critics of ethanol blends argue that it decreases fuel economy, causes corrosion and damages fuel pumps. Prior to federal restrictions and ethanol mandates, methyl tertiary-butyl ether, or MTBE, was the leading oxygenate. Other oxygenate products could enter the market and prove to be environmentally or economically superior to ethanol. Alternative biofuel alcohols, such as methanol and butanol, could evolve and replace ethanol.

Research is currently underway to develop products and processes that have advantages over ethanol, such as: lower vapor pressure, making it easier to add to gasoline; similar energy content as gasoline, reducing any decrease in fuel economy caused by blending with gasoline; ability to blend at higher concentration levels in standard vehicles; and reduced

susceptibility to separation when water is present. Products offering a competitive advantage over ethanol could reduce our ability to generate revenue and profits from ethanol production.

New ethanol process technologies could emerge that require less energy per gallon to produce and result in lower production costs. Our process technologies could become obsolete and place us at a competitive disadvantage, which could have a material adverse effect on our operations, cash flows and financial position.

We may be required to provide remedies for ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein or corn oil that does not meet the specifications defined in our sales contracts.

If we produce or purchase ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein or corn oil that does not meet the specifications defined in our sales contracts, we may be subject to quality claims. We could be required to refund the purchase price of any non-conforming product or replace the non-conforming product at our expense. Ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein or corn oil that we purchase or market and subsequently sell to others could result in similar claims if the product does not meet applicable contract specifications, which could have an adverse impact on our profitability.

Business disruptions due to unforeseen operational failures or factors outside of our control could impact our ability to fulfill contractual obligations.

Natural disasters, pandemics, transportation issues, significant track damage resulting from a train derailment or strikes by our transportation providers could delay shipments of raw materials to our plants or deliveries of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil to our customers. If we are unable to meet customer demand or contract delivery requirements due to stalled operations caused by business disruptions, we could potentially lose customers.

Adverse weather conditions, such as inadequate or excessive amounts of rain during the growing season, overly wet conditions, an early freeze or snowy weather during harvest could impact the supply of corn that is needed to produce ethanol. Corn stored in an open pile may be damaged by rain or warm weather before the corn is dried, shipped or moved into a storage structure.

Our business continues to be adversely impacted by the COVID-19 outbreak.

The outbreak of the coronavirus, or COVID-19, which has been declared by the World Health Organization to be a pandemic, has spread across the globe and continues to impact worldwide economic activity. COVID-19 poses a risk on all aspects of our business, including how it will impact our employees, customers, vendors, and business partners. We are unable to predict the impact that COVID-19 will have on our future financial position and operating results, due to numerous uncertainties. These uncertainties include, but are not limited to: (1) the severity of the virus and its impact on the demand for our products; (2) the duration of the outbreak; (3) federal, state or local governmental regulations or other actions which could include limitations on our operations; (4) the effect on customer demand resulting in a decline in the demand for our products; (5) impacts on our supply chain and potential limitations of supply of our feedstocks; (6) interruptions of our distribution systems and delays in the delivery of our products; (7) the health of our workforce, and our ability to meet staffing needs which is vital to our operations; and (8) volatility in the credit and financial markets.

The COVID-19 pandemic and related economic repercussions have created significant volatility, uncertainty, and turmoil in the energy industry. We are unable to predict the overall impact these events will have on our future financial position and operations.

We continue to actively manage our response in collaboration with customers, government officials, team members and business partners and assessing potential impacts to our future financial position and operating results, as well as adverse developments in our business. It is not possible for us to predict whether there will be additional government-mandated shelter-in-place and similar government orders that could affect our business, how long the existing orders will remain in place, and how these measures will impact our operations.

Our ethanol-related assets may be at greater risk of terrorist attacks, threats of war or actual war, than other possible targets.

Terrorist attacks in the United States, including threats of war or actual war, may adversely affect our operations. A direct attack on our ethanol production plants, or our partnership's storage facilities, fuel terminals and railcars could have a material adverse effect on our financial condition, results of operations and cash flows. Furthermore, a terrorist attack could

have an adverse impact on ethanol prices. Disruption or significant increases in ethanol prices could result in government-imposed price controls.

Our network infrastructure, enterprise applications and internal technology systems could be damaged or otherwise fail and disrupt business activities.

Our network infrastructure, enterprise applications and internal technology systems are instrumental to the day-to-day operations of our business. Numerous factors outside of our control, including earthquakes, floods, lightning, tornados, fire, power loss, telecommunication failures, computer viruses, physical or electronic vandalism or similar disruptions could result in system failures, interruptions or loss of critical data and prevent us from fulfilling customer orders. We cannot provide assurance that our backup systems are sufficient to mitigate hardware or software failures, which could result in business disruptions that negatively impact our operating results and damage our reputation.

We could be adversely affected by cyber-attacks, data security breaches and significant information technology systems interruptions.

We rely on network infrastructure and enterprise applications, and internal technology systems for operational, marketing support and sales, and product development activities. The hardware and software systems related to such activities are subject to damage from earthquakes, floods, lightning, tornados, fire, power loss, telecommunication failures, cyber-attacks and other similar events. They are also subject to acts such as computer viruses, physical or electronic vandalism or other similar disruptions that could cause system interruptions and loss of critical data, and could prevent us from fulfilling customers' orders. Cybersecurity threats and incidents can range from uncoordinated individual attempts to gain unauthorized access to information technology networks and systems to more sophisticated and targeted measures, known as advanced persistent threats, directed at the company, its products, its customers and/or its third-party service providers. Despite the implementation of cybersecurity measures (including access controls, data encryption, vulnerability assessments, employee training, continuous monitoring, and maintenance of backup and protective systems), the company's information technology systems may still be vulnerable to cybersecurity threats and other electronic security breaches. While we have taken reasonable efforts to protect ourselves, and to date, we have not experienced any material losses related to cyber-attacks, we cannot assure our shareholders that any of our security measures would be sufficient in the future. Any event that causes failures or interruption in such hardware or software systems could result in disruption of our business operations, have a negative impact on our operating results, and damage our reputation, which could negatively affect our financial condition, results of operation, cash flows.

We may not be able to hire and retain qualified personnel to operate our facilities.

Our success depends, in part, on our ability to attract and retain competent employees. Qualified managers, engineers, merchandisers and other personnel must be hired for each of our locations. If we are unable to hire and retain productive, skilled personnel, we may not be able to maximize production, optimize plant operations or execute our business strategy.

Compliance with and changes in tax laws could adversely affect our performance.

We are subject to extensive tax liabilities imposed by multiple jurisdictions, including income taxes, indirect taxes (excise/duty, sales/use, gross receipts, and value-added taxes), payroll taxes, franchise taxes, withholding taxes, and ad valorem taxes. New tax laws and regulations and changes in existing tax laws and regulations are continuously being enacted or proposed that could result in increased expenditures for tax liabilities in the future. Many of these liabilities are subject to periodic audits by the respective taxing authority. Subsequent changes to our tax liabilities as a result of these audits may subject us to interest and penalties.

Federal, state and local jurisdictions may challenge our tax return positions.

The positions taken in our federal and state tax return filings require significant judgments, use of estimates and the interpretation and application of complex tax laws. Significant judgment is also required in assessing the timing and amounts of deductible and taxable items. Despite management's belief that our tax return positions are fully supportable, certain positions may be successfully challenged by federal, state and local jurisdictions.

Financial performance of our equity method investments are subject to risks beyond our control and can vary substantially from period to period.

The company invests in certain limited liability companies, which are accounted for using the equity method of accounting. This means that the company's share of net income or loss in the investee increases or decreases, as applicable,

the carrying value of the investment. By operating a business through this arrangement, we do not have control over operating decisions as we would if we owned the business outright. Specifically, we cannot act on major business initiatives without the consent of the other investors.

The company recognizes these investments as a separate line item in the consolidated balance sheets its proportionate share of earnings on a separate line item in the consolidated statements of operations. As a result, the amount of net investment income recognized from these investments can vary substantially from period to period. Any losses experienced by these entities could adversely impact our results of operations and the value of our investment.

We are exposed to credit risk that could result in losses or affect our ability to make payments should a counterparty fail to perform according to the terms of our agreement.

We are exposed to credit risk from a variety of customers, including major integrated oil companies, large independent refiners, petroleum wholesalers and other ethanol plants. We are also exposed to credit risk with major suppliers of petroleum products and agricultural inputs when we make payments for undelivered inventories. Our fixed-price forward contracts are subject to credit risk when prices change significantly prior to delivery. The inability by a third party to pay us for our sales, provide product that was paid for in advance or deliver on a fixed-price contract could result in a loss and adversely impact our liquidity and ability to make our own payments when due.

The interest rates under our revolving credit facility may be impacted by the phase-out of LIBOR.

LIBOR is the basic rate of interest widely used as a reference for setting the interest rates on loans globally. We use LIBOR as a reference rate for our revolving credit facilities. In 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that it intends to phase out LIBOR by the end of 2021. It is unclear if LIBOR will cease to exist at that time or if new methods of calculating LIBOR will be established such that it continues to exist after 2021. The U.S. Federal Reserve, in conjunction with the Alternative Reference Rates Committee, a steering committee comprised of large U.S. financial institutions, is considering replacing U.S. dollar LIBOR with a new index, the Secured Overnight Financing Rate ("SOFR"), calculated using short-term repurchase agreements backed by Treasury securities. We are evaluating the potential impact of the eventual replacement of the LIBOR benchmark interest rate, however, we are not able to predict whether LIBOR will cease to be available after 2021, whether SOFR will become a widely accepted benchmark in place of LIBOR, or what the impact of such a possible transition to SOFR may be on our business, financial condition, and results of operations.

We have limitations, as a holding company, in our ability to receive distributions from a small number of our subsidiaries.

We conduct most of our operations through our subsidiaries and rely on dividends or intercompany transfers of funds to generate free cash flow. Some of our subsidiaries are currently, or are expected to be, limited in their ability to pay dividends or make distributions under the terms of their financing agreements. Consequently, we cannot fully rely on the cash flow from one subsidiary to satisfy the loan obligations of another subsidiary. As a result, if a subsidiary is unable to satisfy its loan obligations, we may not be able to prevent default by providing additional cash to that subsidiary, even if sufficient cash exists elsewhere within our organization.

Increased federal support of cellulosic ethanol could result in increased competition to corn-based ethanol producers.

Legislation, including the American Recovery and Reinvestment Act of 2009 and EISA, provides numerous funding opportunities supporting cellulosic ethanol production. In addition, RFS II mandates an increasing level of biofuel production that is not derived from corn, though this will be amended lower by the EPA in the reset rulemaking. Federal policies suggest a long-term political preference for cellulosic processing using feedstocks such as switch grass, silage, wood chips or other forms of biomass. Cellulosic ethanol is viewed more favorably since the feedstock is not diverted from food production and has a smaller carbon footprint. Several cellulosic ethanol plants are currently under development. While these have had limited success to date, as research and development programs persist, there is risk that cellulosic ethanol could displace corn ethanol.

Any changes in federal mandates from corn-based to cellulosic-based ethanol production may reduce our profitability. Our plants are designed as single-feedstock facilities and would require significant additional investments to convert production to cellulosic ethanol. Furthermore, our plants are strategically located in high-yield, low-cost corn production areas. At present, there is limited supply of alternative feedstocks near our facilities. As a result, the adoption of cellulosic ethanol and its use as the preferred form of ethanol could have a significant adverse impact on our business.

Environmental, social and corporate governance matters and uncertainty regarding regulation of such matters may increase our operating costs, impact our capital markets and potentially reduce the value of our products and assets.

The issue of global climate change continues to attract considerable public and scientific attention with widespread concern about the impacts of human activity, especially the emissions of greenhouse gases such as carbon dioxide and methane. With the incoming administration, climate change legislation in the U.S. is likely to receive increased focus and consideration over the next several years, with numerous proposals having been made and are likely to continue to be made at the international, national, regional and state levels of government that are intended to limit emissions of greenhouse gases and capture carbon. Several states have already adopted measures requiring reduction of greenhouse gases within state boundaries. Other states have elected to participate in voluntary regional cap-and-trade programs. While we believe our products are low carbon and result in a reduction of greenhouse gas emissions compared to alternatives, any significant legislative changes at the international, national, state or local levels could significantly affect our ability to produce and sell our products, could increase the cost of the production and sale of our products and could materially reduce the value of our products.

Apart from governmental regulation, some investment banks based both domestically and internationally have announced that they have adopted environmental, social and corporate governance guidelines (ESG). There have also been efforts in recent years affecting the investment community, including investment advisers, sovereign wealth funds, public pension funds, universities and other groups, promoting the divestment of fossil fuel equities, and encouraging the consideration of ESG practices of companies in a manner that could negatively affect us. The impact of such efforts may adversely affect the demand for and price of securities issued by us, and impact our access to the capital and financial markets.

Further, it is believed by some that climate change itself may cause more extreme weather conditions such as more intense hurricanes, thunderstorms, tornadoes and snow or ice storms, as well as rising sea levels and increased volatility in seasonal temperatures. Extreme weather conditions can interfere with our operations and increase our costs, and damage resulting from extreme weather may not be fully insured. However, at this time, we are unable to determine the extent to which any potential climate change may lead to increased weather hazards affecting our operations.

Our insurance policies do not cover all losses, costs or liabilities that we may experience, and insurance companies that currently insure companies in the energy industry may cease to do so or substantially increase premiums.

We are insured under property, liability and business interruption policies, subject to the deductibles and limits under those policies. We have acquired insurance that we believe to be adequate to prevent loss from material foreseeable risks. However, events may occur for which no insurance is available or for which insurance is not available on terms that are acceptable. Loss from an event, such as, but not limited to war, riots, pandemics, terrorism or other risks, may not be insured and such a loss may have a material adverse effect on our operations, cash flows and financial position.

Certain of our ethanol production plants and our related storage tanks, as well as certain of our fuel terminal facilities are located within recognized seismic and flood zones. We believe that the design of these facilities have been modified to fortify them to meet structural requirements for those regions of the country. We have also obtained additional insurance coverage specific to earthquake and flood risks for the applicable plants and fuel terminals. However, there is no assurance that any such facility would remain in operation if a seismic or flood event were to occur.

Additionally, our ability to obtain and maintain adequate insurance may be adversely affected by conditions in the insurance market over which we have no control. In addition, if we experience insurable events, our annual premiums could increase further or insurance may not be available at all. If significant changes in the number or financial solvency of insurance underwriters for the ethanol industry occur, we may be unable to obtain and maintain adequate insurance at a reasonable cost. We cannot assure our unitholders that we will be able to renew our insurance coverage on acceptable terms, if at all, or that we will be able to arrange for adequate alternative coverage in the event of non-renewal. The occurrence of an event that is not fully covered by insurance, the failure by one or more insurers to honor its commitments for an insured event or the loss of insurance coverage could have a material adverse effect on our financial condition, results of operations, cash flows and ability of the partnership to make distributions to its unitholders.

Risks Related to the Partnership

We depend on the partnership to provide fuel storage and transportation services.

The partnership’s operations are subject to all of the risks and hazards inherent in the storage and transportation of fuel, including: damages to storage facilities, railcars and surrounding properties caused by floods, fires, severe weather,

explosions, natural disasters or acts of terrorism; mechanical or structural failures at the partnership's facilities or at third-party facilities at which its operations are dependent; curtailments of operations relative to severe weather; and other hazards, resulting in severe damage or destruction of the partnership's assets or temporary or permanent shut-down of the partnership's facilities. If the partnership is unable to serve our storage and transportation needs, our ability to operate our business could be adversely impacted, which could adversely affect our financial condition and results of operations. The inability of the partnership to continue operations, for any reason, could also impact the value of our investment in the partnership and, because the partnership is a consolidated entity, our business, financial condition and results of operations.

The partnership's revolving credit facility includes restrictions that may limit its ability to finance future operations, meet its capital needs or expand its business. In addition, the partnership's revolving credit facility matures on December 31, 2021 and the partnership may not be able to renew, extend or replace the expiring facility with similar terms. If the partnership fails to comply with covenants in its revolving credit facility or if the facility is terminated, the partnership may be required to repay its indebtedness thereunder, which may have an adverse effect on the partnership's liquidity and its ability to operate and provide services to us.

The partnership is dependent upon the earnings and cash flow generated by its operations in order to meet its debt service obligations and to allow the partnership to pay cash distributions to our unitholders. The operating and financial restrictions and covenants in the partnership's revolving credit facility or in any future financing agreements could restrict its ability to finance future operations or capital needs or to expand or pursue its business activities, which may, in turn, limit its ability to pay cash distributions to unitholders. For example, the partnership's revolving credit facility restricts its ability to, among other things: (1) make certain cash distributions; (2) incur certain indebtedness; (3) create certain liens; (4) make certain investments; (5) merge or sell certain of our assets; and (6) expand the nature of our business.

Furthermore, the partnership's revolving credit facility contains covenants requiring it to maintain certain financial ratios.

The provisions of the partnership's revolving credit facility may affect its ability to obtain future financing and pursue attractive business opportunities and its flexibility in planning for, and reacting to, changes in business conditions. In addition, a failure to comply with the provisions of the partnership's revolving credit facility could result in an event of default that could enable the partnership's lenders, subject to the terms and conditions of the partnership's revolving credit facility, to declare the outstanding principal of that debt, together with accrued interest, to be immediately due and payable and/or to proceed against the collateral granted to them to secure such debt. If there is a default or event of default, the payment of the partnership's debt is accelerated, defaults under its other debt instruments, if any, may be triggered, and its assets may be insufficient to repay such debt in full. Therefore, the holders of our units could experience a partial or total loss of their investment.

The credit facility will mature on December 31, 2021. The partnership anticipates that it will renew and extend the credit facility prior to its maturity. Adverse changes in market conditions could make the renewal of the credit facility more difficult or cold result in an increase in the cost to renew.

The partnership may not have sufficient available cash to pay quarterly distributions on its units.

The amount of cash the partnership can distribute depends on how much cash is generated from operations, which can fluctuate from quarter to quarter based on ethanol and other fuel volumes, handling fees, payments associated with minimum volume commitments, timely payments by subsidiaries, and other third parties, and prevailing economic conditions. The amount of cash available for distribution also depends on the partnership's operating and general and administrative expenses, capital expenditures, acquisitions and organic growth projects, debt service requirements, working capital needs, ability to borrow funds and access capital markets, revolving credit facility restrictions, cash reserves and other risks affecting cash levels. Increasing the partnership's borrowings or other debt to finance certain projects could increase interest expense, which could impact the amount of cash available for distributions.

There are no limitations in the partnership agreement regarding its ability to issue additional units. Should the partnership issue additional units in connection with an acquisition or expansion, the distributions on the incremental units will increase the risk that the partnership will be unable to maintain or increase distributions on a per unit basis.

Increases in interest rates could adversely impact the partnership's unit price, ability to issue equity or incur debt, and pay cash distributions at intended levels.

The partnership's cash distributions and implied distribution yield affect its unit price. Distributions are often used by investors to compare and rank yield-oriented securities when making investment decisions. A rising interest rate environment

could have an adverse impact on the partnership's unit price, ability to issue equity or incur debt or pay cash distributions at intended levels, which could adversely impact the value of our investment in the partnership.

We may be required to pay taxes on our share of the partnership's income that are greater than the cash distributions we receive from the partnership.

The unitholders of the partnership generally include, for purposes of calculating their U.S. federal, state and local income taxes, their share of the partnership's taxable income, whether they have received cash distributions from the partnership. We ultimately may not receive cash distributions from the partnership equal to our share of taxable income or the taxes that are due with respect to that income, which could negatively impact our liquidity.

A majority of the executive officers and directors of the partnership are also officers of our company, which could result in conflicts of interest.

We indirectly own and control the partnership and appoint all of its officers and directors. A majority of the executive officers and directors of the partnership are also officers or directors of our company. Although our directors and officers have a fiduciary responsibility to manage the company in a manner that is beneficial to us, as directors and officers of the partnership, they also have certain duties to the partnership and its unitholders. Conflicts of interest may arise between us and our affiliates, and the partnership and its unitholders, and in resolving these conflicts, the partnership may favor its own interests over the company's interests. In certain circumstances, the partnership may refer conflicts of interest or potential conflicts of interest to its conflicts committee, which must consist entirely of independent directors, for resolution. The conflicts committee must act in the best interests of the public unitholders of the partnership. As a result, the partnership may manage its business in a manner that differs from the best interests of the company or our stockholders, which could adversely affect our profitability.

Cash available for distributions could be reduced and likely cause a substantial reduction in unit value if the partnership became subject to entity-level taxation for federal income tax purposes.

The present federal income tax treatment of publicly traded partnerships or investments in its units could be modified, at any time, by administrative, legislative or judicial changes and interpretations. From time to time, members of Congress propose and consider substantive changes to the existing federal income tax laws that affect publicly traded partnerships. Should any legislative proposal eliminate the qualifying income exception, all publicly traded partnerships would be treated as corporations for federal income tax purposes. The partnership would be required to pay federal income tax on its taxable income at the corporate tax rate and likely state and local income taxes at varying rates as well. Distributions to unitholders would be taxed as corporate distributions. The partnership's cash available for distributions and the value of the units would be substantially reduced.

Risks Related to our Common Stock

The price of our common stock may be highly volatile and subject to factors beyond our control.

Some of the many factors that can influence the price of our common stock include: (1) our results of operations and the performance of our competitors; (2) public's reaction to our press releases, public announcements and filings with the SEC;
(3) changes in earnings estimates or recommendations by equity research analysts who follow us or other companies in our industry; (4) changes in general economic conditions; (5) changes in market prices for our products or raw materials and related substitutes; (6) sales of common stock by our directors, executive officers and significant shareholders; (7) actions by institutional investors trading in our stock; (8) disruptions in our operations; (9) changes in our management team; (10) other developments affecting us, our industry or our competitors; and (11) U.S. and international economic, legal and regulatory factors unrelated to our performance.

In recent years the stock market has experienced significant price and volume fluctuations, which are unrelated to the operating performance of any particular company. These broad market fluctuations could materially reduce the price of our common stock price based on factors that have little or nothing to do with our company or its performance.

Anti-takeover provisions could make it difficult for a third party to acquire us.

Our restated articles of incorporation, restated bylaws and Iowa's law contain anti-takeover provisions that could delay or prevent change in control of us or our management. These provisions discourage proxy contests, making it difficult for our shareholders to elect directors or take other corporate actions without the consent of our board of directors, which include: (1) board members have three-year staggered terms; (2) board members can only be removed for cause with an affirmative vote of no less than two-thirds of the outstanding shares; (3) shareholder action can only be taken at a special or annual meeting,

not by written consent except where required by Iowa law; (4) shareholders are restricted from making proposals at shareholder meetings; and (5) the board of directors can issue authorized or unissued shares of stock.

We are subject to the provisions of the Iowa Business Corporations Act, which prohibits combinations between an Iowa corporation whose stock is publicly traded or held by more than 2,000 shareholders and an interested shareholder for three years unless certain exemption requirements are met.

Provisions in the convertible notes could also make it more difficult or too expensive for a third party to acquire us. If a takeover constitutes a fundamental change, holders of the notes have the right to require us to repurchase their notes in cash. If a takeover constitutes a make-whole fundamental change, we may be required to increase the conversion rate for holders who convert their notes. In either case, the obligation under the notes could increase the acquisition cost and discourage a third party from acquiring us.

These items discourage transactions that could otherwise command a premium over prevailing market prices and may limit the price investors are willing to pay for our stock.

Non-U.S. shareholders may be subject to U.S. income tax on gains related to the sale of their common stock.

If we are a U.S. real property holding corporation during the shorter of the five-year period before the stock was sold or the period the stock was held by a non-U.S. shareholder, the non-U.S. shareholder could be subject to U.S federal income tax on gains related to the sale of their common stock. Whether we are a U.S. real property holding corporation depends on the fair market value of our U.S. real property interests relative to our other trade or business assets and non-U.S. real property interests. We cannot provide assurance that we are not a U.S. real property holding corporation or will not become one in the future.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

We believe the property owned and leased at our locations is sufficient to accommodate our current needs, as well as potential expansion.

Corporate

We lease approximately 54,000 square feet of office space at 1811 Aksarben Drive in Omaha, Nebraska for our corporate headquarters, which houses our corporate administrative functions and commodity trading operations.

Ethanol Production Segment

We own approximately 1,775 acres of land and lease approximately 78 acres of land at and around our ethanol production facilities. As detailed in our discussion of the ethanol production segment in *Item 1 – Business*, our ethanol plants have the capacity to produce approximately 1.0 billion gallons of ethanol per year.

Agribusiness and Energy Services Segment

We own approximately 39 acres of land at our three grain elevators. As detailed in our discussion in *Item 1 – Business*, our agribusiness and energy services segment facilities include three grain elevators with combined grain storage capacity of approximately 7.6 million bushels, and grain storage capacity at our ethanol plants of approximately 30.5 million bushels.

We lease approximately 50,500 square feet manufacturing space at 4500 S. 76th Circle in Omaha, Nebraska for our Optimal Aquafeed LLC operations which manufactures and stores fish food, feed ingredients and other related products.

Our marketing operations are conducted primarily at our corporate office, in Omaha, Nebraska.

Partnership Segment

Our partnership owns approximately five acres of land and leases approximately 17 acres of land at six locations in five states, as disclosed in *Item 1 – Business*, where its fuel terminals are located and owns approximately 42 acres of land and leases approximately two acres of land where its storage facilities are located at our ethanol production facilities.

Item 3. Legal Proceedings.

We are currently involved in litigation that has occurred in the ordinary course of doing business. We do not believe this will have a material adverse effect on our financial position, results of operations or cash flows.

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.

Common Stock

Our common stock trades under the symbol “GPRE” on Nasdaq.

Holders of Record

We had 1,999 holders of record of our common stock, not including beneficial holders whose shares are held in names other than their own, on February 11, 2021. This figure does not include approximately 32.7 million shares held in depository trusts.

Dividend Policy

On June 18, 2019, the company announced that its board of directors decided to suspend its future quarterly cash dividend following the June 14, 2019 dividend payment, in order to retain and redirect cash flow to the company’s Project 24 operating expense equalization plan, the deployment of high-protein technology and its stock repurchase program.

Issuer Purchases of Equity Securities

Employees surrender shares when restricted stock grants are vested to satisfy statutory minimum required payroll tax withholding obligations. No restricted stock vested during the fourth quarter of 2020 and therefore no shares were surrendered.

Our board of directors authorized a share repurchase program of up to $200.0 million of our common stock. Under this program, we may repurchase shares in open market transactions, privately negotiated transactions, accelerated buyback programs, tender offers or by other means. The timing and amount of the transactions are determined by management based on its evaluation of market conditions, share price, legal requirements and other factors. The program may be suspended, modified or discontinued at any time, without prior notice. We did not repurchase any shares during the fourth quarter of 2020. Since inception, the company has repurchased 7,396,936 shares of common stock for approximately $92.8 million under the program.

Recent Sales of Unregistered Securities

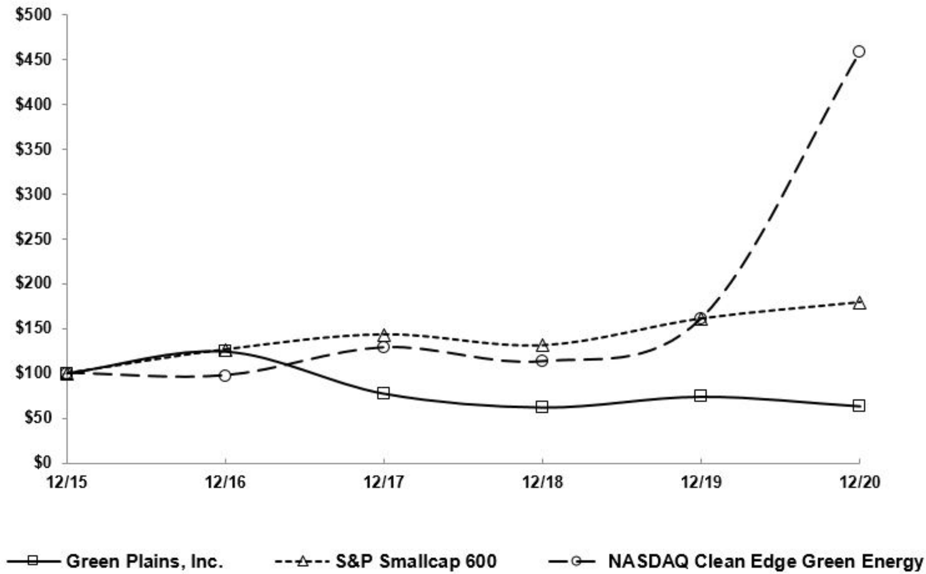
None.

Equity Compensation Plans

Refer to *Item 12 – Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters* for information regarding shares authorized for issuance under equity compensation plans.

Performance Graph

The following graph compares our cumulative total return with the S&P SmallCap 600 Index and the Nasdaq Clean Edge Green Energy Index (CELS) for each of the five years ended December 31, 2020. The graph assumes a $100 investment in our common stock and each index at December 31, 2015, and that all dividends were reinvested.



	12/15	12/16	12/17	12/18	12/19	12/20
Green Plains Inc.	$ 100.00	$ 124.59	$ 77.28	$ 61.73	$ 73.83	$ 63.02
S&P SmallCap 600	100.00	126.56	143.30	131.15	161.03	179.20
Nasdaq Clean Edge Green Energy	100.00	97.35	128.55	112.98	161.18	459.09

The information in the graph will not be considered solicitation material, nor will it be filed with the SEC or incorporated by reference into any future filing under the Securities Act or the Exchange Act, unless we specifically incorporate it by reference into our filing.

Item 6. Selected Financial Data.

The statement of operations data for the years ended December 31, 2020, 2019 and 2018 and the balance sheet data as of December 31, 2020 and 2019 are derived from our audited consolidated financial statements and should be read together with the accompanying notes included elsewhere in this report.

The statement of operations data for the years ended December 31, 2017 and 2016 and the balance sheet data as of December 31, 2018, 2017 and 2016 are derived from our audited consolidated financial statements that are not included in this report, which describe a number of matters that materially affect the comparability of the periods presented.

The following selected financial data should be read together with *Item 7 – Management's Discussion and Analysis of Financial Condition and Results of Operations* of this report. The financial information below is not necessarily indicative of results to be expected for any future period. Future results could differ materially from historical results due to numerous factors, including those discussed in *Item 1A – Risk Factors* of this report.

	Year Ended December 31,				
	2020	2019 (1)	2018 (1) (2)	2017 (1)	2016 (1)
Statement of Operations Data:					
(in thousands, except per share information)					
Revenues	$ 1,923,719	$ 2,417,238	$ 2,983,932	$ 3,289,475	$ 3,159,313
Costs and expenses	2,046,415	2,559,808	2,893,978	3,265,727	3,080,101
Operating income (loss) from continuing operations (3)	(122,696)	(142,570)	89,954	23,748	79,212
Total other expense (4)	38,434	30,372	84,310	78,902	50,918
Net income (loss) from continuing operations including noncontrolling interest	(89,654)	(148,829)	25,195	76,633	24,669
Net income from discontinued operations, net of income taxes	-	829	11,539	4,998	5,822
Net income (loss)	(89,654)	(148,000)	36,734	81,631	30,491
Net income (loss) attributable to Green Plains	$ (108,775)	$ (166,860)	$ 15,923	$ 61,061	$ 10,663
Basic earnings per share:					
Earnings (loss) per share from continuing operations	$ (3.14)	$ (4.40)	$ 0.11	$ 1.43	$ 0.13
Earnings per share from discontinued operations	-	0.02	0.28	0.13	0.15
Earnings (loss) per share attributable to Green Plains	$ (3.14)	$ (4.38)	$ 0.39	$ 1.56	$ 0.28
Diluted earnings per share:					
Earnings (loss) per share from continuing operations	$ (3.14)	$ (4.40)	$ 0.11	$ 1.37	$ 0.13
Earnings per share from discontinued operations	-	0.02	0.28	0.10	0.15
Earnings (loss) per share attributable to Green Plains	$ (3.14)	$ (4.38)	$ 0.39	$ 1.47	$ 0.28
Cash dividend declared per share (5)	$ -	$ 0.24	$ 0.48	$ 0.48	$ 0.40
Other Data: (Non-GAAP)					
Adjusted EBITDA (in thousands)	$ 36,748	$ (39,940)	$ 75,429	$ 154,451	$ 175,106

	Year Ended December 31,				
	2020	2019	2018 [1]	2017 [1]	2016 [1]
Balance Sheet Data (in thousands)**:**					
Cash and cash equivalents	$ 233,860	$ 245,977	$ 251,681	$ 266,619	$ 303,449
Current assets	642,353	667,913	1,206,642	1,211,965	1,000,576
Total assets	1,578,917	1,698,218	2,216,432	2,790,144	2,506,492
Current liabilities	452,556	541,791	833,700	891,755	594,946
Long-term debt	287,299	243,990	298,110	767,278	782,610
Total liabilities	802,253	832,932	1,153,443	1,731,008	1,527,301
Stockholders' equity	776,664	865,286	1,062,989	1,059,136	979,191

(1) The assets and liabilities and results of operations of GPCC prior to its divesture on September 1, 2019 have been reclassified as discontinued operations.
(2) Fiscal year 2018 includes approximately eleven months of operations of the Bluffton, Indiana, Lakota, Iowa, Riga, Michigan and the Hopewell, Virginia ethanol plants, as well as Fleischmann's Vinegar.
(3) Fiscal year 2020 includes the goodwill impairment charge of $24.1 million, the $22.4 million loss on sale of assets, net from the sale of the Hereford, Texas ethanol plant and the $1.5 million gain from sale of GPCC. Fiscal year 2018 includes the $150.4 million gain on the sale of the Bluffton, Indiana, Lakota, Iowa, and Riga, Michigan ethanol plants, as well as Fleischmann's Vinegar during the fourth quarter.
(4) Fiscal year 2019 includes the $4.8 million gain related to the sale of our 50% interest in JGP Energy Partners LLC.
(5) On June 18, 2019, the company announced that its board of directors decided to suspend its future quarterly cash dividend following the June 14, 2019 dividend payment.

We use EBITDA and adjusted EBITDA as segment measures of profitability to compare the financial performance of our reportable segments and manage those segments. EBITDA is defined as earnings before interest expense, income tax expense, including related tax expense of equity method investments, depreciation and amortization excluding the amortization of right-of-use assets and debt issuance costs. Adjusted EBITDA includes adjustments related to operational results of GPCC prior to its disposition which are recorded as discontinued operations, our proportional share of EBITDA adjustments of our equity method investees, noncash goodwill impairment and the loss (gain) on sale of assets, net. We believe EBITDA and adjusted EBITDA are useful measures to compare our performance against other companies. EBITDA and adjusted EBITDA should not be considered an alternative to, or more meaningful than, net income, which is prepared in accordance with GAAP. EBITDA and adjusted EBITDA calculations may vary from company to company. Accordingly, our computation of EBITDA and adjusted EBITDA may not be comparable with a similarly titled measure of other companies.

The following table reconciles net income (loss) from continuing operations including noncontrolling interest to adjusted EBITDA (in thousands):

	Year Ended December 31,				
	2020	2019	2018	2017	2016
Net income (loss) from continuing operations including noncontrolling interest	$ (89,654)	$ (148,829)	$ 25,195	$ 76,633	$ 24,669
Interest expense	39,993	40,200	87,449	83,700	49,935
Income tax expense (benefit), net of equity method income tax expense	(43,879)	(21,316)	(20,147)	(132,061)	3,625
Depreciation and amortization [1]	78,244	72,127	98,258	103,582	83,137
EBITDA	(15,296)	(57,818)	190,755	131,854	161,366
EBITDA adjustments related to discontinued operations	-	17,703	33,897	22,516	13,615
Proportional share of EBITDA adjustments to equity method investees	7,093	4,974	1,128	81	125
Loss (gain) on sale of assets, net [2]	20,860	(4,799)	(150,351)	-	-
Noncash goodwill impairment	24,091	-	-	-	-
Adjusted EBITDA	$ 36,748	$ (39,940)	$ 75,429	$ 154,451	$ 175,106

(1) Excludes the amortization of operating lease right-of-use assets and amortization of debt issuance costs.
(2) Fiscal year 2019 includes gain reported in other income (expense).

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

General

The following discussion and analysis includes information management believes is relevant to understand and assess our consolidated financial condition and results of operations. This section should be read in conjunction with our consolidated financial statements, accompanying notes and the risk factors contained in this report.

Overview

Green Plains is an Iowa corporation, founded in June 2004 as a producer of low carbon fuels and has grown to be one of the leading corn processors in the world. We continue the transition from a commodity-processing business to a value-add agricultural technology company focusing on creating diverse, non-cyclical, higher margin products. In addition, we are currently undergoing a number of project initiatives to improve margins. Through our Project 24 initiative, we anticipate reductions in operating expense per gallon across our non-ICM plants and with our high-protein initiative, we expect to produce various Ultra-High Protein feed ingredients further increasing margins per gallon.

Our first Ultra-High Protein installation was completed at our Shenandoah plant during the first quarter of 2020 with shipments of dried product beginning in April 2020. Installation at our Wood River plant began during the third quarter 2020 with shipments expected to begin in the third quarter of 2021. We anticipate that additional locations will be completed over the course of the next several years.

We have also upgraded our York facility to include USP grade alcohol capabilities and it will be further upgraded to GNS by adding additional distillation and processing capabilities to serve other high-value markets, including the beverage alcohol market and will continue to produce USP grade alcohol during construction. The GNS upgrade is expected to be completed during the second quarter of 2021. We expect to complete the CST production facility at York in the first quarter of 2021, which will allow for the production of both food and industrial grade dextrose. We anticipate modifying one or more biorefineries to CST production facilities to meet anticipated future customer demands.

We recently completed the purchase of a majority interest in Fluid Quip Technologies, LLC. The acquisition capitalizes on the core strengths of each company to develop and implement proven, value-added agriculture, food and industrial biotechnology systems and rapidly expand installation and production of Ultra-High Protein across Green Plains facilities, as well as offer these technologies to partnering biofuel facilities.

Additionally, we have taken advantage of opportunities to divest certain assets in recent years. We are focused on generating stable operating margins through our business segments and risk management strategy. We own and operate assets throughout the ethanol value chain: upstream, with grain handling and storage; through our ethanol production facilities; and downstream, with marketing and distribution services to mitigate commodity price volatility. Our other businesses leverage our supply chain, production platform and expertise.

Our profitability is highly dependent on commodity prices, particularly for ethanol, distillers grains, corn oil, corn, and natural gas. Since market price fluctuations of these commodities are not always correlated, our operations may be unprofitable at times. We use a variety of risk management tools and hedging strategies to monitor price risk exposure at our ethanol plants and lock in favorable margins or reduce production when margins are compressed.

More information about our business, properties and strategy can be found under *Item 1 – Business* and a description of our risk factors can be found under *Item 1A – Risk Factors*.

Industry Factors Affecting our Results of Operations

U.S. Ethanol Supply and Demand

According to the EIA, domestic ethanol production averaged 0.91 million barrels per day in 2020, which was 12% lower than the 1.03 million barrels per day in 2019. Refiner and blender input volume decreased 13% to 798 thousand barrels per day for 2020, compared with 921 thousand barrels per day in 2019. Gasoline demand decreased 1.2 million barrels per day, or 13% in 2020. U.S. domestic ethanol ending stocks increased by approximately 2.5 million barrels, or 12%, year over year to 23.5 million barrels. As of December 31, 2020, according to Prime the Pump, there were approximately 2,300 retail stations selling E15 in 30 states, up from 2,080 at the beginning of the year, as well as 203 pipeline terminal locations now offering E15 to wholesale customers.

Global Ethanol Supply and Demand

According to the USDA Foreign Agriculture Service, domestic ethanol exports through November 30, 2020 were approximately 1.22 bgy, down 7.6% from 1.32 bgy for the same period of 2019. Canada was the largest export destination for U.S. ethanol accounting for 25% of domestic ethanol export volume. Brazil, India, and South Korea accounted for 16%, 15%, and 8%, respectively, of U.S. ethanol exports. We currently estimate that net ethanol exports will range from 1.3 to 1.5 billion gallons in 2021, excluding any significant exports to China, based on historical demand from a variety of countries and certain countries who seek to improve their air quality and eliminate MTBE from their own fuel supplies.

On April 1, 2018, China announced it would add an additional 15% tariff to the existing 30% tariff it had earlier imposed on ethanol imports from the United States and Brazil. China later raised the tariff further to 70% as the trade war escalated. In January 2020, China and the United States struck a "Phase I" trade agreement, which included commitments on agricultural commodity purchases. Ethanol, corn and distillers grains were included as potential purchases in the agreement. China has been purchasing large quantities of corn, which has raised domestic prices of this feedstock for our ethanol production process. In addition, in October 2020 it was announced that China had purchased a shipment of U.S. ethanol for the first time since March 2018.

The cost to produce the equivalent amount of starch found in sugar from $3.50-per-bushel corn is 7 cents per pound. The average price of sugar was approximately 12.9 cents per pound during 2020.

Year-to-date U.S. distillers grains exports through November 30, 2020, were 10.1 million metric tons, or 1% higher than the same period last year, according to the USDA Foreign Agriculture Service. Mexico, Vietnam, South Korea, Indonesia, Thailand, and Turkey accounted for approximately 62.5% of total U.S. distillers export volumes.

Legislation and Regulation

We are sensitive to government programs and policies that affect the supply and demand for ethanol and other fuels, which in turn may impact the volume of ethanol and other fuels we handle. Over the past few years, various bills and amendments have been proposed in the House and Senate which would eliminate the RFS II entirely, eliminate the corn based ethanol portion of the mandate, and make it more difficult to sell fuel blends with higher levels of ethanol. We believe it is unlikely that any of these bills will become law in the current Congress. In addition, the manner in which the EPA administers the RFS II and related regulations can have a significant impact on the actual amount of ethanol blended into the domestic fuel supply.

Federal mandates and state-level clean fuel programs supporting the use of renewable fuels are a significant driver of ethanol demand in the U.S. Ethanol policies are influenced by concerns for the environment, diversifying our fuel supply, and reducing the country's dependence on foreign oil. Consumer acceptance of flex-fuel vehicles and higher ethanol blends of ethanol in non-flex-fuel vehicles may be necessary before ethanol can achieve further growth in U.S. market share. In addition, expansion of clean fuel programs in other states, or a national low carbon fuel standard could increase the demand for ethanol, depending on how it is structured.

Congress first enacted CAFE in 1975 to reduce energy consumption by increasing the fuel economy of cars and light trucks. Flexible-fuel vehicles (FFVs), which are designed to run on a mixture of fuels, including higher blends of ethanol such as E85, receive preferential treatment in the form of CAFE credits. There are approximately 21 million FFVs on the road in the U.S. today, 16 million of which are light duty trucks. FFV credits have been decreasing since 2014 and were completely phased out in 2020. Absent CAFE preferences, auto manufacturers may not be willing to build flexible-fuel vehicles, which has the potential to slow the growth of E85 markets. However, California's Low Carbon Fuel Standard program (LCFS) has driven growth in E85 usage, and other state/regional LCFS programs have the potential to do the same.

The RFS II sets a floor for ethanol usage in the United States. When the RFS II was established in 2010, the required volume of "conventional" or corn-based ethanol to be blended with gasoline was to increase each year until it reached 15.0 billion gallons in 2015, which left the EPA to address existing limitations in both supply and demand. The EPA has not yet released a draft RVO rule for the 2021 volumes, despite the fact they typically release a draft mid-year and finalize the rule by November 30 each year. It is unclear when they will release the RVO for 2021.

According to the RFS II, if mandatory renewable fuel volumes are reduced by at least 20% for two consecutive years, the EPA is required to modify, or reset, statutory volumes through 2022 – the year through which the statutorily prescribed volumes run. While conventional ethanol maintained 15 billion gallons, 2019 was the second consecutive year that the total proposed RVO was more than 20% below the statutory volumes levels. Thus, the EPA was expected to initiate a reset

rulemaking, and modify statutory volumes through 2022, and do so based on the same factors they are to use in setting the RVOs post-2022. These factors include environmental impact, domestic energy security, expected production, infrastructure impact, consumer costs, job creation, price of agricultural commodities, food prices, and rural economic development. However, in late 2019, the EPA announced it would not be moving forward with a reset rulemaking in 2020. It is unclear when or if they will propose a reset rulemaking.

Under the RFS, RINs and SREs are important tools impacting supply and demand. The EPA assigns individual refiners, blenders, and importers the volume of renewable fuels they are obligated to use based on their percentage of total domestic transportation fuel sales. Obligated parties use RINs to show compliance with the RFS II mandated volumes. Ethanol producers assign RINs to renewable fuels and the RINs are detached when the renewable fuel is blended with transportation fuel domestically. Market participants can trade the detached RINs in the open market. The market price of detached RINs affects the price of ethanol in certain markets and can influence purchasing decisions by obligated parties. As it relates to SREs, a small refinery is defined as one that processes fewer than 75,000 barrels of petroleum per day. Small refineries can petition the EPA for a SRE which, if approved, waives their portion of the annual RVO requirements. The EPA, through consultation with the DOE and the USDA can grant them a full or partial waiver, or deny it outright within 90 days of submittal. The EPA granted significantly more of these waivers for 2016, 2017 and 2018 than they had in the past, totaling 790 mmg of waived requirements for the 2016 compliance year, 1.82 billion gallons for 2017 and 1.43 billion gallons for 2018. In doing so, the EPA effectively reduced the RFS II mandated volumes for those compliance years by those amounts respectively, and as a result, RIN values declined significantly.

The One-Pound Waiver that was extended in May 2019 to allow E15 to be sold year-round to all vehicles model year 2001 and newer is being challenged in an action filed in Federal District Court for the D.C. Circuit. However, the One-Pound Waiver remains in effect, and E15 is sold year-round in approximately 30 states.

Biofuels groups have filed a lawsuit in the Court of Appeals for the D.C. Circuit, challenging the 2019 RVO rule over the EPA's failure to address small refinery exemptions in the rulemaking. This was the first RFS II rulemaking since the expanded use of the exemptions came to light; however, the EPA had declined to cap the number of waivers it grants, and until late 2019, had declined to alter how it accounts for the retroactive waivers in its annual volume calculations. The EPA has a statutory mandate to ensure the volume requirements are met, which are achieved by setting the percentage standards for obligated parties. The EPA's recent approach accomplished the opposite. Even if all the obligated parties complied with their respective percentage obligations for 2019, the nation's overall supply of renewable fuel would not meet the total volume requirements set by the EPA. This undermines Congressional intent to increase the consumption of renewable fuels in the domestic transportation fuel supply. Biofuels groups have argued the EPA must therefore adjust its percentage standard calculations to make up for past retroactive waivers and adjust the standards to account for any waivers it reasonably expects to grant in the future.

In 2017, the D.C. Circuit ruled in favor of biofuel groups against the EPA related to its decision to lower the 2016 volume requirements by 500 mmg. As a result, the Court remanded to the EPA to make up for the 500 mmg. Despite this, in the proposed 2020 RVO rulemaking released in July 2019, the EPA stated it does not intend to make up the 500 mmg as the court directed, citing potential burden on obligated parties. The EPA had indicated that it plans to address this court ordered remand in conjunction with the 2021 RVO rulemaking, however that rulemaking has been delayed indefinitely for political reasons.

In 2019, in a supplemental rulemaking to the 2020 RVO rule, the EPA changed their approach, and for the first time accounted for the gallons that they anticipate they will be waiving from the blending requirements due to small refinery exemptions. To accomplish this, they added in the trailing three year average of gallons the DOE recommended be waived, in effect raising the blending volumes across the board in anticipation of waiving the obligations in whole or in part for certain refineries that qualify for the exemptions. Though the EPA has often disregarded the recommendations of the DOE in years past, they stated in the rule their intent to adhere to these recommendations going forward, including granting partial waivers rather than an all or nothing approach. The EPA will be adjudicating the 2020 compliance year small refinery exemption applications in early 2021, but have indicated they will adhere to the DOE recommendations for the 2019 compliance year applications as well.

In January 2020, the U.S. Court of Appeals for the 10th Circuit ruled on RFA et. al. vs. EPA in favor of biofuels interests, overturning EPA's granting of refinery exemptions to three refineries on two separate grounds. The Court agreed that, under the Clean Air Act, refineries are eligible for SREs for a given RVO year only if such exemptions are extensions of exemptions granted in previous RVO years. In this case, the three refineries at issue did not qualify for SREs in the year prior to the year that EPA granted them. They were thus ineligible for additional SRE relief because there were no immediately prior SREs to extend. In addition, the Court agreed that the disproportionate economic hardship prong of SRE eligibility should be determined solely by reference to whether compliance with the RFS II creates such hardship, not whether

compliance plus other issues create disproportionate economic hardship. The Court thus vacated EPA's grant of SREs for certain years and remanded the grants back to EPA. The refiners appealed for a rehearing which was denied. Two of the refiners appealed the decision to the U.S. Supreme Court and in January 2021, the Supreme Court announced they would hear the case. If the decision against the EPA is upheld by the Supreme Court, it is uncertain how the EPA will propose to remedy the situation.

In light of the 10th Circuit ruling, a number of refineries have applied for “gap year” SREs in an effort to establish a continuous string of relief and to ensure they are able to qualify for SREs going forward. A total of 64 gap year requests were filed with the EPA and reviewed by the DOE. In September 2020 the EPA announced that they were denying 54 of the gap year requests that had been scored and returned by DOE, regardless of how they had been scored. Without a string of continuous SRE approvals, almost no small refinery would be eligible to apply for hardship relief in this manner, unless the Supreme Court overturns the 10th Circuit ruling, which we believe is unlikely.

In October 2019, the White House directed the USDA and EPA to move forward with rulemaking to expand access to higher blends of biofuels. This includes funding for infrastructure, labeling changes and allowing E15 to be sold through E10 infrastructure. The USDA rolled out the Higher Blend Infrastructure Incentive Program in the summer of 2020, providing competitive grants to fuel terminals and retailers for installing equipment for dispensing higher blends of ethanol and biodiesel. The EPA had indicated it would move forward with notice of proposed rulemaking on E15 labeling reforms, but they have not as of this filing. In 2020, five Governors and 15 Republican Senators sent letters to the EPA requesting a general waiver from the RFS due to the drop in demand caused by COVID-19 travel restrictions. As of this filing the EPA had indicated only that they are watching the situation closely and reviewing the letters.

To respond to the COVID-19 health crisis and attempt to offset the subsequent economic damage, Congress passed multiple relief measures, most notably the CARES Act in March 2020, which created and funded multiple programs that have impacted our industry. The USDA was given additional resources for the Commodity Credit Corporation (CCC) and they are using those funds to provide direct payments to farmers, including corn farmers from whom we purchase most of our feedstock for ethanol production. Similar to the trade aid payments made by the USDA over the past two years, this cash injection for farmers could cause them to delay marketing decisions and increase the price we have to pay to purchase corn. The CARES Act also allowed for certain net operating loss carrybacks, which has allowed us to receive certain tax refunds. In December 2020, Congress passed and the President signed into law an annual spending package coupled with another COVID relief bill which included additional funds for the Secretary of Agriculture to distribute to those impacted by the pandemic. The language of the bill specifically includes biofuels producers as eligible for some of this aid.

The CARES Act provided a tax exclusion on the shipment of undenatured ethanol for use in manufacturing hand sanitizer, a key ingredient of which is undenatured ethanol of specific grades. The FDA has also provided expanded guidance to allow for more denaturants to be used in ethanol intended for hand sanitizer production, and has expanded the grades of ethanol allowed for the duration of the public health crisis.

Government actions abroad can significantly impact the demand for U.S. ethanol. In September 2017, China’s National Development and Reform Commission, the National Energy Agency and 15 other state departments issued a joint plan to expand the use and production of biofuels containing up to 10% ethanol by 2020. China, the number three importer of U.S. ethanol in 2016, imported negligible volumes during 2018 and 2019 due to a 30% tariff on U.S. ethanol, which increased to 70% in early 2018. There is no assurance that China’s joint plan to expand blending to 10% will be carried to fruition, nor that it will lead to increased imports of U.S. ethanol in the near term. Ethanol is included as an agricultural commodity under the “Phase I” agreement with China, wherein they are to purchase upwards of $40 billion in agricultural commodities from the U.S. in both 2020 and 2021. In 2020, there were few meaningful purchases of U.S. ethanol by China.

In Brazil, the Secretary of Foreign Trade had issued a tariff rate quota which expired in December of 2020. Exports to Brazil were on pace for 120 mmg in 2020. All U.S. ethanol gallons now face a 20% tariff into Brazil. Our exports also face tariffs, rate quotas, countervailing duties, and other hurdles in the European Union, India, Peru, Columbia and elsewhere, which limits the ability to compete in some markets. We believe some countries are using the COVID-19 crisis as justification for raising duties on imports of U.S. ethanol, or blocking our imports entirely.

In June 2017, the Energy Regulatory Commission of Mexico (CRE) approved the use of 10% ethanol blends, which was challenged by multiple lawsuits, of which several were dismissed. The remaining four cases follow one of two tracks: 1) to determine the constitutionality of the CRE regulation, or 2) to determine the benefits, or lack thereof, of introducing E10 to Mexico. An injunction was granted in October 2017, preventing the blending and selling of E10, but was overturned by a higher court in June 2018 making it legal to blend and sell E10 by PEMEX throughout Mexico except for its three largest metropolitan areas. On January 15, 2020, the Mexican Supreme Court ruled that the expedited process for the CRE regulation was unconstitutional, and that after a 180 day period the maximum ethanol blend allowed in the country would revert to

5.8%. There is an effort underway to go through the full regulatory process to allow for 10% blends countrywide, including in the three major metropolitan areas. The 180 day window was extended due to COVID-19, and the new deadline is March 20, 2021.

In January 2020, the updated North American Free Trade Agreement, known as the United States Mexico Canada Agreement or USMCA was signed. The USMCA went into effect on July 1, 2020, and maintains the duty free access of U.S. agricultural commodities, including ethanol, into Canada and Mexico. According to the Department of Commerce, exports to Canada were 303.5 mmg and exports to Mexico were 61.5 mmg through November 30, 2020.

Environmental and Other Regulation

Our operations are subject to environmental regulations, including those that govern the handling and release of ethanol, crude oil and other liquid hydrocarbon materials. Compliance with existing and anticipated environmental laws and regulations may increase our overall cost of doing business, including capital costs to construct, maintain, operate, and upgrade equipment and facilities. Our business may also be impacted by government policies, such as tariffs, duties, subsidies, import and export restrictions and outright embargos. We employ maintenance and operations personnel at each of its facilities, which are regulated by the Occupational Safety and Health Administration.

The U.S. ethanol industry relies heavily on tank cars to deliver its product to market. In 2015, the DOT finalized the Enhanced Tank Car Standard and Operational Controls for High-Hazard and Flammable Trains, or DOT specification 117, which established a schedule to retrofit or replace older tank cars that carry crude oil and ethanol, braking standards intended to reduce the severity of accidents and new operational protocols. The deadline for compliance with DOT specification 117 is May 1, 2023. The rule may increase our lease costs for railcars over the long term, which will in turn result in an increase in fees the partnership charges for railcar capacity. Additionally, existing railcars may be out of service for a period of time while upgrades are made, tightening supply in an industry that is highly dependent on railcars to transport product. We intend to strategically manage our leased railcar fleet to comply with the new regulations and have commenced transition of our fleet to DOT 117 compliant railcars. As of December 31, 2020, approximately 50% of our railcar fleet was DOT 117 compliant. We anticipate that an additional 20% of our railcar fleet will be DOT 117 compliant by the end of 2021, and that our entire fleet will be fully compliant by 2023.

In September 2015, the FDA issued rules for Current Good Manufacturing Practice, Hazard Analysis and Risk-Based Preventative Controls for food for animals in response to FSMA. The rules require FDA-registered food facilities to address safety concerns for sourcing, manufacturing and shipping food products and food for animals through food safety programs that include conducting hazard analyses, developing risk-based preventative controls and monitoring, and addressing intentional adulteration, recalls, sanitary transportation and supplier verification. We believe we have taken sufficient measures to comply with these regulations.

Variability of Commodity Prices

Our business is highly sensitive to commodity price fluctuations, particularly for corn, ethanol, corn oil, distillers grains and natural gas, which are impacted by factors that are outside of our control, including weather conditions, corn yield, changes in domestic and global ethanol supply and demand, government programs and policies and the price of crude oil, gasoline and substitute fuels. We use various financial instruments to manage and reduce our exposure to price variability. For more information about our commodity price risk, refer to *Item 7A. - Qualitative and Quantitative Disclosures About Market Risk, Commodity Price Risk* in this report.

During 2020, we continued to experience a weak ethanol margin environment. We maintained an average utilization rate of approximately 71% of capacity during 2020, compared with 76% of capacity, for the prior year. The reduction in the average utilization rate was primarily due to continued poor margins driven in part by a reduction in motor fuel demand as a result of the COVID-19 pandemic. Our operating strategy is to reduce operating expenses, energy usage and water consumption through our Project 24 initiative while running at higher utilization rates in order to achieve improved margins. However, in the current environment, we may exercise operational discretion that results in reductions in production. Additionally, we may experience lower run rates due to the construction of various projects as well as due to delays in receiving the necessary permits required to operate our facilities. It is possible that production could be below minimum volume commitments in the future, depending on various factors that drive each biorefineries variable contribution margin, including future driving and gasoline demand for the industry.

Critical Accounting Policies and Estimates

The preparation of our consolidated financial statements requires that we use estimates that affect the reported assets, liabilities, revenue and expense and related disclosures for contingent assets and liabilities. We base our estimates on experience and assumptions we believe are proper and reasonable. While we regularly evaluate the appropriateness of these estimates, actual results could differ materially from our estimates. The following accounting policies, in particular, may be impacted by judgments, assumptions and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

We recognize revenue when obligations under the terms of a contract with a customer are satisfied. Generally this occurs with the transfer of control of products or services. Revenue is measured as the amount of consideration expected to be received in exchange for transferring goods or providing services. Sales, value add, and other taxes we collect concurrent with revenue-producing activities are excluded from revenue.

Sales of ethanol, distillers grains, corn oil, natural gas and other commodities by the company's marketing business are recognized when obligations under the terms of a contract with a customer are satisfied. Generally, this occurs with the transfer of control of products or services. Revenues related to marketing for third parties are presented on a gross basis as we control the product prior to the sale to the end customer, take title of the product and have inventory risk. Unearned revenue is recorded for goods in transit when we have received payment but control has not yet been transferred to the customer. Revenues for receiving, storing, transferring and transporting ethanol and other fuels are recognized when the product is delivered to the customer.

We routinely enter into physical-delivery energy commodity purchase and sale agreements. At times, we settle these transactions by transferring obligations to other counterparties rather than delivering the physical commodity. Energy trading transactions are reported net as a component of revenue. Revenues include net gains or losses from derivatives related to products sold while cost of goods sold includes net gains or losses from derivatives related to commodities purchased. Revenues also include realized gains and losses on related derivative financial instruments and reclassifications of realized gains and losses on cash flow hedges from accumulated other comprehensive income or loss.

Sales of products, including agricultural commodities are recognized when control of the product is transferred to the customer, which depends on the agreed upon shipment or delivery terms. Revenues related to grain merchandising are presented gross and include shipping and handling, which is also a component of cost of goods sold. Revenues from grain storage are recognized over time as the services are rendered.

A substantial portion of the partnership revenues are derived from fixed-fee commercial agreements for storage, terminal or transportation services. The partnership recognizes revenue upon transfer of control of product from its storage tanks and fuel terminals, when railcar volumetric capacity is provided, and as truck transportation services are performed. To the extent shortfalls associated with minimum volume commitments in the previous four quarters continue to exist, volumes in excess of the minimum volume commitment are applied to those shortfalls. Remaining excess volumes generating operating lease revenue are recognized as incurred.

Intercompany revenues are eliminated on a consolidated basis for reporting purposes.

Impairment of Long-Lived Assets and Goodwill

Our long-lived assets consist of property and equipment, operating lease right-of-use assets, intangible assets and equity method investments. We review long-lived assets for impairment whenever events or changes in circumstances indicate the carrying amount of the asset may not be recoverable. We measure recoverability by comparing the carrying amount of the asset with the estimated undiscounted future cash flows the asset is expected to generate. If the carrying amount of the asset exceeds its estimated future cash flows, we record an impairment charge for the amount in excess of the fair value. There were no material impairment charges recorded for the periods reported.

Our goodwill is related to certain acquisitions within our ethanol production and partnership segments. We review goodwill for impairment at least annually, as of October 1, or more frequently whenever events or changes in circumstances indicate that an impairment may have occurred.

We estimate the amount and timing of projected cash flows that will be generated by an asset over an extended period of time when we review our long-lived assets and goodwill. Circumstances that may indicate impairment include a decline in future projected cash flows, a decision to suspend plant operations for an extended period of time, a sustained decline in our

market capitalization, a sustained decline in market prices for similar assets or businesses or a significant adverse change in legal or regulatory matters, or business climate. Significant management judgment is required to determine the fair value of our long-lived assets and goodwill and measure impairment, including projected cash flows. Fair value is determined through various valuation techniques, including discounted cash flow models utilizing assumed margins, cost of capital, inflation and other inputs, sales of comparable properties and third-party independent appraisals. Changes in estimated fair value as a result of declining ethanol margins, loss of significant customers or other factors could result in an impairment of the asset.

Near term industry outlook due to the significant decrease in crude oil prices, lower gasoline demand, general uncertainty due to the COVID-19 outbreak and the subsequent decline in our stock price caused a decline in the company's market capitalization during the three months ended March 31, 2020. As such, the company determined a triggering event had occurred that required an interim impairment assessment for its ethanol production reporting unit. Due to the impairment indicators noted as a result of these triggering events, we evaluated our goodwill as of March 31, 2020. Significant assumptions inherent in the valuation methodologies for goodwill were employed and included, but were not limited to, prospective financial information, growth rates, discount rates, inflationary factors, and cost of capital. Based on our quantitative evaluation, we determined that the fair value of the ethanol production reporting unit did not exceed its carrying value. As a result, we concluded that the goodwill assigned to the ethanol production reporting unit was impaired and recorded a non-cash impairment charge of $24.1 million.

During the first half of 2020, a decline in the partnership's stock price resulted in a decrease in the partnership's market capitalization. As such, we determined a triggering event had occurred that required an interim impairment assessment as of March 31, 2020 and June 30, 2020. Significant assumptions inherent in the valuation methodologies for goodwill impairment testing were employed and include market capitalization, prospective financial information, growth rates, discount rates, inflationary factors, and cost of capital. Based on the partnership's quantitative evaluation as of March 31, 2020 and June 30, 2020, it was determined that the fair value of the partnership reporting unit substantially exceeded its carrying value, and the partnership concluded that the goodwill was not impaired.

We performed the annual goodwill impairment assessment as of October 1, 2020 using a qualitative approach, which resulted in no identified triggering events, and as such, no goodwill impairment. Please refer to *Note 10 – Goodwill and Intangible Assets* to the consolidated financial statements for further details.

Leases

On January 1, 2019, we adopted the amended guidance in ASC 842, *Leases*, and all related amendments and applied it to all leases using the optional transition method which requires the amended guidance to be applied at the date of adoption. The standard does not require the guidance to be applied to the earliest comparative period presented in the financial statements. As such, comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods.

We lease certain facilities, parcels of land, and equipment. Our leases are accounted for as operating leases, with lease expense recognized on a straight-line basis over the lease term. The term of the lease may include options to extend or terminate the lease when it is reasonably certain that we will exercise one of those options. For leases with initial terms greater than 12 months, we record operating lease right-of-use assets and corresponding operating lease liabilities. Leases with an initial term of 12 months or less are not recorded on our consolidated balance sheet. Operating lease right-of-use assets represent our right to control an underlying asset for the lease term and operating lease liabilities represent our obligation to make lease payments arising from the lease. These assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. As our leases do not provide an implicit rate, we use our incremental borrowing rate based on information available at commencement date to determine the present value of future payments.

Our partnership segment records the majority of its operating lease revenue from its storage and throughput services and rail transportation services agreements with Green Plains Trade. The lease revenue from Green Plains Trade is eliminated upon consolidation. In addition, the partnership may sublease certain of its railcars to third parties on a short-term basis. These subleases are classified as operating leases, with the associated sublease revenue recognized on a straight-line basis over the lease term.

Refer to *Note 18 – Commitments and Contingencies* to the consolidated financial statements for further details on operating lease expense.

Derivative Financial Instruments

We use various derivative financial instruments, including exchange-traded futures and exchange-traded and over-the-counter options contracts, to attempt to minimize risk and the effect of commodity price changes including but not limited to, corn, ethanol, natural gas, soybean meal, soybean oil and crude oil. We monitor and manage this exposure as part of our overall risk management policy to reduce the adverse effect market volatility may have on our operating results. We may hedge these commodities as one way to mitigate risk; however, there may be situations when these hedging activities themselves result in losses.

By using derivatives to hedge exposures to changes in commodity prices, we are exposed to credit and market risk. Our exposure to credit risk includes the counterparty's failure to fulfill its performance obligations under the terms of the derivative contract. We minimize our credit risk by entering into transactions with high quality counterparties, limiting the amount of financial exposure it has with each counterparty and monitoring their financial condition. Market risk is the risk that the value of the financial instrument might be adversely affected by a change in commodity prices or interest rates. We manage market risk by incorporating parameters to monitor exposure within our risk management strategy, which limits the types of derivative instruments and strategies we can use and the degree of market risk we can take using derivative instruments.

We evaluate our physical delivery contracts to determine if they qualify for normal purchase or sale exemptions which are expected to be used or sold over a reasonable period in the normal course of business. Contracts that do not meet the normal purchase or sale criteria are recorded at fair value. Changes in fair value are recorded in operating income unless the contracts qualify for, and we elect, cash flow hedge accounting treatment.

Certain qualifying derivatives related to ethanol production and agribusiness and energy services segments are designated as cash flow hedges. We evaluate the derivative instrument to ascertain its effectiveness prior to entering into cash flow hedges. Unrealized gains and losses are reflected in accumulated other comprehensive income or loss until the gain or loss from the underlying hedged transaction is realized. When it becomes probable a forecasted transaction will not occur, the cash flow hedge treatment is discontinued, which affects earnings. These derivative financial instruments are recognized in current assets or current liabilities at fair value.

At times, we hedge our exposure to changes in inventory values and designate qualifying derivatives as fair value hedges. The carrying amount of the hedged inventory is adjusted in the current period for changes in fair value. Ineffectiveness of the hedges is recognized in the current period to the extent the change in fair value of the inventory is not offset by the change in fair value of the derivative.

Accounting for Income Taxes

Income taxes are accounted for under the asset and liability method in accordance with GAAP. Deferred tax assets and liabilities are recognized for future tax consequences between existing assets and liabilities and their respective tax basis, and for net operating loss and tax credit carry-forwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to be applied to taxable income in years temporary differences are expected to be recovered or settled. The effect of a tax rate change is recognized in the period that includes the enactment date. The realization of deferred tax assets depends on the generation of future taxable income during the periods in which temporary differences become deductible. Management considers scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies to make this assessment. A valuation allowance is recorded by the company when it is more likely than not that some portion or all of a deferred tax asset will not be realized. In making such a determination, management considers the positive and negative evidence to support the need for, or reversal of, a valuation allowance. The weight given to the potential effects of positive and negative evidence is based on the extent it can be objectively verified.

To account for uncertainty in income taxes, we gauge the likelihood of a tax position based on the technical merits of the position, perform a subsequent measurement related to the maximum benefit and degree of likelihood, and determine the benefit to be recognized in the financial statements, if any.

Recently Issued Accounting Pronouncements

For information related to recent accounting pronouncements, see *Note 2 – Summary of Significant Accounting Policies* included as part of the notes to consolidated financial statements in this report.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Components of Revenues and Expenses

Revenues. For our ethanol production segment, our revenues are derived primarily from the sale of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil. For our agribusiness and energy services segment, our primary sources of revenue include sales of ethanol, distillers grains and corn oil that we market for our ethanol plants, in which we earn a marketing fee, sales of ethanol we market for a third-party and sales of grain and other commodities purchased in the open market. For our food and ingredients segment, the sale of corn oil, and vinegar prior to the sale of Fleischmann's Vinegar during the fourth quarter of 2018, are our primary sources of revenue. For our partnership segment, our revenues consist primarily of fees for receiving, storing, transferring and transporting ethanol and other fuels. Revenues include net gains or losses from derivatives related to products sold.

Cost of Goods Sold. For our ethanol production segment, cost of goods sold includes direct labor, materials and plant overhead costs. Direct labor includes compensation and related benefits of non-management personnel involved in ethanol plant operations. Plant overhead consists primarily of plant utilities and outbound freight charges. Corn is the most significant raw material cost followed by natural gas, which is used to power steam generation in the ethanol production process and dry distillers grains. Cost of goods sold also includes net gains or losses from derivatives related to commodities purchased.

For our agribusiness and energy services segment, purchases of ethanol, distillers grains, corn oil and grain are the primary component of cost of goods sold. Grain inventories held for sale and forward purchase and sale contracts are valued at market prices when available or other market quotes adjusted for differences, such as transportation, between the exchange-traded market and local markets where the terms of the contracts are based. Changes in the market value of grain inventories, forward purchase and sale contracts, and exchange-traded futures and options contracts are recognized as a component of cost of goods sold.

For our food and ingredients segment, food-grade ethanol was the most significant raw material cost. For our vinegar operation, which was sold during the fourth quarter of 2018, cost of goods sold included direct labor, materials and plant overhead costs. Direct labor included compensation and related benefits of non-management personnel involved in vinegar operations.

Operations and Maintenance Expense. For our partnership segment, transportation expense is the primary component of operations and maintenance expense. Transportation expense includes rail car leases, shipping and freight and costs incurred for storing ethanol at destination terminals.

Loss (Gain) on Sale of Assets, Net. We completed the sale of the ethanol plant located in Hereford, Texas during the fourth quarter of 2020. We completed the sale of the three ethanol plants located in Bluffton, Indiana, Lakota, Iowa and Riga, Michigan, as well as Fleischmann's Vinegar during the fourth quarter of 2018. Proceeds from these sales, offset by related expenses, were recorded primarily at the corporate level, with only the loss on Hereford of $3.9 million being recorded at the ethanol production level and the gain on the assignment of operating leases of $2.7 million being recorded at the partnership level.

Selling, General and Administrative Expense. Selling, general and administrative expenses are recognized at the operating segment and corporate level. These expenses consist of employee salaries, incentives and benefits; office expenses; director fees; and professional fees for accounting, legal, consulting and investor relations services. Personnel costs, which include employee salaries, incentives, and benefits, as well as severance and separation costs, are the largest expenditure. Selling, general and administrative expenses that cannot be allocated to an operating segment are referred to as corporate activities.

Other Income (Expense). Other income (expense) includes interest earned, interest expense and other non-operating items, including a gain of $4.8 million related to the sale of our 50% interest in JGP Energy Partners LLC during fiscal year 2019.

Income (loss) from Equity Method Investees, Net of Income Taxes. Income (loss) from equity method investees, net of income taxes, represents our proportional share of earnings from our equity method investees. Refer to *Note 21 – Equity Method Investments* to the consolidated financial statements for further details.

Net Income from Discontinued Operations, Net of Income Taxes. Net income from discontinued operations, net of income taxes represents the operations of GPCC prior to its disposition during the third quarter of 2019. GPCC was previously a wholly owned subsidiary of Green Plains until the formation of the GPCC joint venture and disposition September 1, 2019. Refer to *Note 5 – Acquisitions, Dispositions and Discontinued Operations* to the consolidated financial statements for further details.

Results of Operations

Comparability

The following summarizes various events that affect the comparability of our operating results for the past three years:

	August 2018	Sublette, Kansas and Tulia, Texas cattle feeding operations were acquired.
	November 2018	Bluffton, Indiana, Lakota, Iowa and Riga, Michigan ethanol plants were sold and certain storage assets of these plants were acquired from the partnership prior to being sold.
	November 2018	Hopewell, Virginia ethanol plant was permanently closed.
	November 2018	Fleischmann's Vinegar was sold.
	September 2019	An aggregate 50% membership interest of GPCC was sold, resulting in the deconsolidation of GPCC and the equity method of accounting treatment of our continued investment. Operational results of GPCC prior to its disposition have been reclassified as discontinued operations in our consolidated financial statements. The assets and liabilities of GPCC have been reclassified as assets and liabilities of discontinued operations.
	December 2019	Our 50% membership interest in JGP Energy Partners was sold.
	October 2020	Our remaining 50% membership interest in GPCC was sold.
	December 2020	Hereford, Texas ethanol plant was sold and certain storage assets of this plant were acquired from the partnership prior to being sold.
	December 2020	Acquired a majority interest in Fluid Quip Technologies, LLC.

The year ended December 31, 2018, includes approximately five months of operations at our Sublette and Tulia cattle feeding businesses, eleven months of operations at our Bluffton, Lakota, Hopewell and Riga ethanol plants and eleven months of our Fleischmann's Vinegar operations. The year ended December 31, 2019, includes eight months of operations of GPCC which are included in discontinued operations with the remaining four months of the GPCC joint venture being accounted for using the equity method of accounting. Additionally, operations of GPCC have been reclassified as discontinued operations and assets and liabilities of GPCC have been reclassified as assets and liabilities of discontinued operations. The year ended December 31, 2020, includes approximately nine months of operations of the GPCC joint venture being accounted for using the equity method of accounting. The sale of the Hereford plant and acquisition of a majority interest in FQT did not have a material impact on comparability.

Segment Results

We report the financial and operating performance for the following four operating segments: (1) ethanol production, which includes the production of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil operations and included vinegar production until the sale of Fleischmann's Vinegar during the fourth quarter of 2018 and (4) partnership, which includes fuel storage and transportation services.

During the normal course of business, our operating segments do business with each other. For example, our agribusiness and energy services segment procures grain and natural gas and sells products, including ethanol, distillers grains and corn oil of our ethanol production segment. Our partnership segment provides fuel storage and transportation services for our agribusiness and energy services segment. These intersegment activities are treated like third-party transactions with origination, marketing and storage fees charged at estimated market values. Consequently, these transactions affect segment performance; however, they do not impact our consolidated results since the revenues and corresponding costs are eliminated.

Corporate activities include selling, general and administrative expenses, consisting primarily of compensation, professional fees and overhead costs not directly related to a specific operating segment and the loss (gain) on sale of assets, net recorded during the fourth quarter of 2020 and the fourth quarter of 2018. When we evaluate segment performance, we review the following segment information as well as earnings before interest, income taxes, depreciation and amortization, or EBITDA, and adjusted EBITDA.

The selected operating segment financial information are as follows (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Revenues:			
Ethanol production:			
Revenues from external customers	$ 1,502,481	$ 1,700,615	$ 2,120,475
Intersegment revenues	100	100	186
Total segment revenues	1,502,581	1,700,715	2,120,661
Agribusiness and energy services:			
Revenues from external customers	416,403	708,316	735,855
Intersegment revenues	27,468	27,184	33,101
Total segment revenues	443,871	735,500	768,956
Food and ingredients:			
Revenues from external customers	-	1,451	121,121
Intersegment revenues	-	-	-
Total segment revenues	-	1,451	121,121
Partnership:			
Revenues from external customers	4,835	6,856	6,481
Intersegment revenues	78,510	75,531	94,267
Total segment revenues	83,345	82,387	100,748
Revenues including intersegment activity	2,029,797	2,520,053	3,111,486
Intersegment eliminations	(106,078)	(102,815)	(127,554)
Revenues as reported	$ 1,923,719	$ 2,417,238	$ 2,983,932

	Year Ended December 31,		
	2020	2019	2018
Cost of goods sold:			
Ethanol production	$ 1,507,335	$ 1,791,099	$ 2,118,787
Agribusiness and energy services	409,407	696,226	717,772
Food and ingredients	-	1,526	94,679
Partnership	-	-	-
Intersegment eliminations	(104,579)	(103,904)	(124,270)
	$ 1,812,163	$ 2,384,947	$ 2,806,968

	Year Ended December 31,		
	2020	2019	2018
Operating income (loss):			
Ethanol production [1]	$ (129,618)	$ (178,575)	$ (111,823)
Agribusiness and energy services	15,773	22,777	29,076
Food and ingredients	-	(76)	14,354
Partnership	50,437	50,635	64,770
Intersegment eliminations	(1,400)	1,188	(3,110)
Corporate activities [2]	(57,888)	(38,519)	96,687
	$ (122,696)	$ (142,570)	$ 89,954

(1) Operating loss for the ethanol production segment for fiscal year 2020 includes a goodwill impairment charge of $24.1 million and $3.9 million pretax loss on sale of assets from the sale of the Hereford, Texas ethanol plant.

(2) Corporate activities for fiscal year 2020 include a goodwill impairment charge of $24.1 million, $18.5 million pretax loss on sale of assets from the sale of the Hereford, Texas ethanol plant and a $1.5 million net gain from sale of GPCC. Fiscal year 2018 includes a $150.4 million gain on the sale of the Bluffton, Indiana, Lakota, Iowa, and Riga, Michigan ethanol plants, as well as Fleischmann's Vinegar during the fourth quarter.

We use EBITDA and adjusted EBITDA as segment measures of profitability to compare the financial performance of our reportable segments and manage those segments. EBITDA is defined as earnings before interest expense, income tax expense, including related tax expense of equity method investments, depreciation and amortization excluding the amortization of right-of-use assets and debt issuance costs. Adjusted EBITDA includes adjustments related to operational results of GPCC prior to its disposition which are recorded as discontinued operations, our proportional share of EBITDA adjustments of our equity method investees, noncash goodwill impairment and the loss (gain) on sale of assets, net. We believe EBITDA and adjusted EBITDA are useful measures to compare our performance against other companies. EBITDA and adjusted EBITDA should not be considered an alternative to, or more meaningful than, net income, which is prepared in accordance with GAAP. EBITDA and adjusted EBITDA calculations may vary from company to company. Accordingly, our computation of EBITDA and adjusted EBITDA may not be comparable with a similarly titled measure of other companies.

The following table reconciles net income (loss) from continuing operations including noncontrolling interest to adjusted EBITDA (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Net income (loss) from continuing operations including noncontrolling interest	$ (89,654)	$ (148,829)	$ 25,195
Interest expense	39,993	40,200	87,449
Income tax benefit, net of equity method income taxes	(43,879)	(21,316)	(20,147)
Depreciation and amortization [1]	78,244	72,127	98,258
EBITDA	(15,296)	(57,818)	190,755
EBITDA adjustments related to discontinued operations	-	17,703	33,897
Proportional share of EBITDA adjustments to equity method investees	7,093	4,974	1,128
Loss (gain) on sale of assets, net [2]	20,860	(4,799)	(150,351)
Noncash goodwill impairment	24,091	-	-
Adjusted EBITDA	$ 36,748	$ (39,940)	$ 75,429

(1) Excludes the amortization of operating lease right-of-use assets and amortization of debt issuance costs.
(2) Fiscal year 2019 includes gain reported in other income (expense).

The following table reconciles net income (loss) from continuing operations including noncontrolling interest to adjusted EBITDA by segment (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Adjusted EBITDA:			
Ethanol production [1]	$ (60,868)	$ (114,494)	$ (31,623)
Agribusiness and energy services	18,430	25,050	31,583
Food and ingredients	-	(76)	21,908
Partnership	54,907	54,853	69,399
Intersegment eliminations	(1,400)	1,188	(3,110)
Corporate activities [2]	(26,365)	(24,339)	102,598
EBITDA	(15,296)	(57,818)	190,755
EBITDA adjustments related to discontinued operations	-	17,703	33,897
Proportional share of EBITDA adjustments to equity method investees	7,093	4,974	1,128
Loss (gain) on sale of assets, net	20,860	(4,799)	(150,351)
Noncash goodwill impairment	24,091	-	-
Adjusted EBITDA	$ 36,748	$ (39,940)	$ 75,429

(1) Fiscal year 2020 includes the goodwill impairment charge of $24.1 million and $3.9 million pretax loss on sale of assets from the sale of the Hereford, Texas ethanol plant.
(2) Corporate activities for fiscal year 2020 include a goodwill impairment charge of $24.1 million, a $18.5 million pretax loss on sale of assets from the sale of the Hereford, Texas ethanol plant and the $1.5 million gain from sale of GPCC. Fiscal year 2019 includes a $4.8 million gain related to the sale of our 50% interest in JGP Energy Partners LLC. Fiscal year 2018 includes the $150.4 million gain on the sale of the Bluffton, Indiana, Lakota, Iowa, and Riga, Michigan ethanol plants, as well as Fleischmann's Vinegar during the fourth quarter.

Total assets by segment are as follows (in thousands):

	Year Ended December 31,	
	2020	2019
Total assets [(1)]:		
Ethanol production	$ 852,959	$ 884,293
Agribusiness and energy services	426,724	410,400
Partnership	91,205	90,011
Corporate assets	228,074	324,280
Intersegment eliminations	(20,045)	(10,766)
	$ 1,578,917	$ 1,698,218

(1) Asset balances by segment exclude intercompany payable and receivable balances.

Year Ended December 31, 2020 Compared with the Year Ended December 31, 2019

Consolidated Results

Consolidated revenues decreased $493.5 million in 2020, compared with 2019 primarily due to lower production volumes of ethanol and distillers grains in our ethanol production segment and decreased trading revenues within our agribusiness and energy services segment.

Operating loss decreased $19.9 million and adjusted EBITDA increased $76.7 million in 2020, compared with 2019 primarily due to increased margins associated with the sales of industrial-grade alcohol and Ultra-High Protein feed, offset by the pretax write-off of the goodwill in the ethanol production segment and loss on sale of assets, net during fiscal year 2020. Interest expense decreased $0.2 million in 2020, compared with 2019 primarily due to lower interest rates. Income tax benefit was $50.4 million in 2020, compared to $21.3 million in 2019. The change in income tax benefit is primarily due to the carry back of a tax NOL generated in 2019 to the 2014 tax year under the newly enacted CARES Act of 2020, as well as the release of a valuation allowance recorded against the 2019 tax NOL and other deferred tax assets, while in 2019 we recorded a tax benefit due to a loss before income taxes, partially offset by the recognition of a $25.9 million valuation allowance against the company's deferred tax assets.

The following discussion provides greater detail about our segment performance.

Ethanol Production Segment

Key operating data for our ethanol production segment is as follows:

	Year Ended December 31,	
	2020	2019
Ethanol sold (thousands of gallons)	793,743	856,623
Distillers grains sold (thousands of equivalent dried tons)	2,054	2,234
Corn oil sold (thousands of pounds)	213,818	212,071
Corn consumed (thousands of bushels)	275,351	298,178

Revenues in the ethanol production segment decreased $198.1 million in 2020 compared with 2019 primarily due to lower production volumes of ethanol and distillers grains.

Cost of goods sold in the ethanol production segment decreased $283.8 million for 2020 compared with 2019 due to lower production volumes. Operating loss decreased $49.0 million and EBITDA decreased $53.6 million in 2020 compared with the 2019 primarily due to improved margins as well as increased sales of industrial-grade alcohol and Ultra-High Protein feed, offset by the pretax write-off of the goodwill and the loss on sale of assets, net during fiscal year 2020. Depreciation and amortization expense for the ethanol production segment was $68.0 million for 2020, compared with $63.1 million during 2019.

Agribusiness and Energy Services Segment

Revenues in the agribusiness and energy services segment decreased $291.6 million while operating income decreased $7.0 million and EBITDA decreased $6.6 million in 2020 compared with 2019. The decrease in revenues was primarily due to a decrease in ethanol and distillers grain trading activity, as well as lower average realized prices for ethanol. Operating income and EBITDA decreased primarily as a result of decreased margins during the first and second quarters.

Food and Ingredients Segment

The food and ingredients segment, which now represents food-grade corn oil production had no activity during fiscal year 2020.

Partnership Segment

Revenues generated from the partnership segment increased $1.0 million in 2020 compared with 2019. Storage and throughput service revenue increased $1.5 million due to an increase in the rate per gallon charged to Green Plains Trade beginning on July 1, 2020. Trucking and other revenue increased $0.4 million primarily due to an increase in volumes transported for Green Plains Trade. Railcar transportation services revenue increased $0.2 million primarily due to an increase in average volumetric capacity provided and the average capacity fee charged of $0.7 million, offset by a decrease in railcar sublease revenue of $0.5 million. Terminal services revenue decreased $1.1 million as a result of a reduction in fees associated with minimum volume commitments.

Operating income for the partnership segment decreased $0.2 million while EBITDA increased $0.1 million in 2020 compared to 2019 due to the changes in revenues discussed above, partially offset by an increase in operations and maintenance expenses of $0.5 million.

Intersegment Eliminations

Intersegment eliminations of revenues increased by $3.3 million for 2020 compared with 2019 due to increased storage and throughput fees paid to the partnership segment.

Corporate Activities

Operating loss increased by $19.4 million for 2020 compared with 2019, primarily due to the loss on sale of assets recorded during the fourth quarter of 2020.

Income Taxes

We recorded income tax benefit of $50.4 million for 2020 compared to $21.3 million in 2019. The change in income tax benefit is primarily due to the carry back of a tax NOL generated in 2019 to the 2014 tax year under the newly enacted CARES Act of 2020, as well the release of a valuation allowance recorded against the 2019 tax NOL and other deferred tax assets, while in 2019 we recorded a tax benefit due to a loss before income taxes, partially offset by the recognition of a $25.9 million valuation allowance against the company’s deferred tax assets. We increased the valuation allowance for our net deferred tax assets due to uncertainty that we will realize these assets in the future. The valuation allowance on deferred tax assets was recognized as a result of negative evidence, including cumulative losses in recent years, outweighing the more subjective positive evidence.

Net Income from Discontinued Operations

As previously discussed, we sold an aggregate 50% membership interest in GPCC to TGAM and StepStone during the third quarter of 2019. After closing, GPCC was no longer consolidated in our consolidated financial statements and the GPCC investment was accounted for using the equity method of accounting. GPCC results for all reported periods prior to its disposition are classified as discontinued operations. Net income from discontinued operations was $0.8 million in 2019.

Year Ended December 31, 2019 Compared with the Year Ended December 31, 2018

Consolidated Results

Consolidated revenues decreased $566.7 million in 2019, compared with 2018 primarily due to the disposition of three ethanol plants and the sale of Fleischmann’s Vinegar during the fourth quarter of 2018.

Operating income decreased $232.5 million and adjusted EBITDA decreased $115.4 million in 2019, compared with 2018 primarily due to lower volumes and decreased margins on ethanol production in 2019. Interest expense decreased $47.2 million in 2019, compared with 2018 primarily due to the repayment of the $500 million senior secured term loan during the fourth quarter of 2018 and the deconsolidation of GPCC and elimination of the related revolver in the third quarter of 2019. Income tax benefit was $21.3 million in 2019, compared to $20.1 million in 2018. The change in income tax benefit is primarily due to a loss before income taxes in 2019, partially offset by the recognition of a valuation allowance of $25.9 million against the company's net deferred tax assets, while in 2018 we recorded the impact of R&D credits, net of FIN 48 reserves, of $19.8 million.

The following discussion provides greater detail about our segment performance.

Ethanol Production Segment

Key operating data for our ethanol production segment is as follows:

	Year Ended December 31,	
	2019	2018
Ethanol sold (thousands of gallons)	856,623	1,086,633
Distillers grains sold (thousands of equivalent dried tons)	2,234	2,815
Corn oil sold (thousands of pounds)	212,071	276,299
Corn consumed (thousands of bushels)	298,178	377,084

Revenues in the ethanol production segment decreased $419.9 million in 2019 compared with 2018 primarily due to the disposition of three ethanol plants during the fourth quarter of 2018 as well as lower production volumes of ethanol, distillers grains and corn oil due to the depressed margin environment and lower average realized prices for ethanol and distillers grains in 2019.

Cost of goods sold in the ethanol production segment decreased $327.7 million for 2019 compared with 2018 due to the disposition of three ethanol plants during the fourth quarter of 2018 as well as lower production volumes. As a result of the factors identified above, operating income decreased $66.8 million and EBITDA decreased $82.9 million during 2019. Depreciation and amortization expense for the ethanol production segment was $63.1 million for 2019, compared with $80.2 million during 2018 due to the sale of three ethanol plants during the fourth quarter of 2018.

Agribusiness and Energy Services Segment

Revenues in the agribusiness and energy services segment decreased $33.5 million while operating income decreased $6.3 million and EBITDA decreased $6.5 million in 2019 compared with 2018. The decrease in revenues was primarily due to a decrease in ethanol, distillers grain and corn oil production and trading activity, as well as lower average realized prices for ethanol. Operating income and EBITDA decreased primarily as a result of decreased margins.

Food and Ingredients Segment

Revenues in our food and ingredients segment decreased $119.7 million while operating income decreased by $14.4 million and EBITDA decreased $22.0 million during 2019, compared with 2018. The decrease in revenues, operating income and EBITDA was primarily due to the sale of Fleischmann's Vinegar outlined above.

Partnership Segment

Revenues generated from the partnership segment decreased $18.4 million in 2019 compared with 2018. Storage and throughput revenues decreased $12.1 million primarily due to a decrease in throughput volumes as a result the disposition of three ethanol plants in the fourth quarter of 2018. Revenues generated from rail transportation services decreased $4.8 million primarily due to the reduction in volumetric capacity provided as a result of the assignment of railcar operating leases as part of the disposition discussed above. Terminal services revenue decreased $0.8 million as a result of reduced throughput volume at our terminals. Trucking and other revenues decreased $0.6 million primarily due to a reduction in volumes transported for Green Plains Trade, partially offset by an increase in volumes transported for third party customers.

Operating income for the partnership segment decreased $14.1 million while EBITDA decreased $14.5 million in 2019 compared to 2018 due to the changes in revenues discussed above, partially offset by a decrease in operations and maintenance expenses of $5.2 million as a result of the factors identified above.

Intersegment Eliminations

Intersegment eliminations of revenues decreased by $24.7 million for 2019 compared with 2018 due to a decrease in storage and throughput fees paid to the partnership segment as well as decreased intersegment marketing fees within the agribusiness and energy services segment as a result of lower production volumes.

Corporate Activities

Operating income decreased by $135.2 million for 2019 compared with 2018, primarily due to the gain on sale of assets recorded during the fourth quarter of 2018.

Income Taxes

We recorded income tax benefit of $21.3 million for 2019 compared to $20.1 million in 2018. The change in income tax benefit is primarily due to a loss before income taxes in 2019, partially offset by the recognition of a $25.9 million valuation allowance against the company's net deferred tax assets, while in 2018 we recorded the impact of R&D credits, net of FIN 48 reserves, of $19.8 million. We increased the valuation allowance for our net deferred tax assets due to uncertainty that we will realize these assets in the future. The valuation allowance on deferred tax assets was recognized as a result of negative evidence, including cumulative losses in recent years, outweighing the more subjective positive evidence.

Net Income from Discontinued Operations

As previously discussed, we sold an aggregate 50% membership interest in GPCC to TGAM and StepStone during the third quarter of 2019. After closing, GPCC was no longer consolidated in our consolidated financial statements and the GPCC investment was accounted for using the equity method of accounting. GPCC results for all reported periods prior to its disposition are classified as discontinued operations. Net income from discontinued operations decreased by $10.7 million in 2019 primarily due to severe winter weather and abnormally negative basis during the first quarter of 2019.

Liquidity and Capital Resources

Our principal sources of liquidity include cash generated from operating activities and bank credit facilities. We fund our operating expenses and service debt primarily with operating cash flows. Capital resources for maintenance and growth expenditures are funded by a variety of sources, including cash generated from operating activities, borrowings under bank credit facilities, or issuance of senior notes or equity. Our ability to access capital markets for debt under reasonable terms depends on our financial condition, credit ratings and market conditions. We believe that our ability to obtain financing at reasonable rates and history of positive cash flow from operating activities, which have been positive for seven of the previous ten years, provide a solid foundation to meet our future liquidity and capital resource requirements.

On December 31, 2020, we had $233.9 million in cash and equivalents, excluding restricted cash, consisting of $180.7 million available to our parent company and the remainder at our subsidiaries. Additionally, we had $41.0 million in restricted cash at December 31, 2020. We also had $332.0 million available under our committed revolving credit agreements and delayed draw term loan, including $5.0 million available under the partnership's credit facility, some of which were subject to restrictions or other lending conditions. Funds held by our subsidiaries are generally required for their ongoing operational needs and restricted from distribution. At December 31, 2020, our subsidiaries had approximately $77.7 million of net assets that were not available to use in the form of dividends, loans or advances due to restrictions contained in their credit facilities.

Net cash provided by operating activities of continuing operations was $98.9 million in 2020 compared with net cash used in operating activities of continuing operations of $27.0 million in 2019. Operating activities compared to the prior year were primarily affected by the decrease in operating loss, distributions from equity method investments, goodwill impairment and the loss on disposal of assets during fiscal year 2020. Net cash used in investing activities of continuing operations was $11.5 million in 2020, compared to net cash provided by investing activities of continuing operations of $34.8 million in 2019 due primarily to an increase in capital expenditures during fiscal year 2020. Net cash used in financing activities of continued operations was $82.5 million in 2020, compared to $18.9 million in 2019 primarily due to an increase in debt repayments offset by lower repurchases of common stock during fiscal year 2020.

Additionally, Green Plains Trade, Green Plains Grain and Green Plains Commodity Management use revolving credit facilities to finance working capital requirements. We frequently draw from and repay these facilities which results in significant cash movements reflected on a gross basis within financing activities as proceeds from and payments on short-term borrowings.

We incurred capital expenditures of $111.8 million in 2020 primarily for high-protein expansion projects at our Shenandoah and Wood River biorefineries, Project 24 operating expense reduction and for various maintenance projects. The current projected estimate for capital spending for 2021 is approximately $200 million to $225 million, which is subject to review prior to the initiation of any project. The estimate includes additional expenditures for our high-protein and Project 24 initiatives, as well as expenditures for various other maintenance projects, and is expected to be financed with cash proceeds from recent dispositions, available borrowings under our credit facilities and notes and cash provided by operating activities.

Our business is highly sensitive to the price of commodities, particularly for corn, ethanol, distillers grains, corn oil and natural gas. We use derivative financial instruments to reduce the market risk associated with fluctuations in commodity prices. Sudden changes in commodity prices may require cash deposits with brokers for margin calls or significant liquidity with little advanced notice to meet margin calls, depending on our open derivative positions. On December 31, 2020, we had $29.8 million in margin deposits for broker margin requirements included in the balance of restricted cash. We continuously monitor our exposure to margin calls and believe we will continue to maintain adequate liquidity to cover margin calls from our operating results and borrowings.

On June 18, 2019, we announced that our board of directors decided to suspend future quarterly cash dividends following the June 14, 2019 dividend payment, in order to retain and redirect cash flow to our Project 24 operating expense equalization plan, the deployment of high-protein technology and our stock repurchase program.

Our board of directors authorized a share repurchase program of up to $200.0 million of our common stock. Under the program, we may repurchase shares in open market transactions, privately negotiated transactions, accelerated share buyback programs, tender offers or by other means. The timing and amount of repurchase transactions are determined by our management based on market conditions, share price, legal requirements and other factors. The program may be suspended, modified or discontinued at any time without prior notice. During 2020, we purchased a total of 880,979 shares of common stock for approximately $11.5 million. As of December 31, 2020, we have repurchased 7,396,936 of common stock for approximately $92.8 million under the program.

The requirements under the partnership agreement for the conversion of all of the outstanding subordinated units into common units were satisfied upon the payment of the distribution with respect to the quarter ended June 30, 2018. Accordingly, the subordination period ended on August 13, 2018, the first business day after the date of the distribution payment, and all of the 15,889,642 outstanding subordinated units were converted into common units on a one-for-one basis. The conversion of the subordinated units does not impact the amount of cash distributions paid or the total number of outstanding units.

On December 27, 2019, we filed a shelf registration statement on Form S-3 with the SEC, declared effective January 7, 2020, registering an indeterminate number of shares of common stock, warrants and debt securities up to $250,000,000.

We believe we have sufficient working capital for our existing operations. Additionally, subsequent to December 31, 2020, we closed on a $125 million, 5-year mezzanine note facility with BlackRock. Furthermore, our liquidity position is expected to improve as a result of the sale of the ethanol plant located in Ord, Nebraska, announced in January 2021, which is expected to close within 45 days. A continued sustained period of unprofitable operations, however, may strain our liquidity. We may sell additional assets or equity or borrow capital to improve or preserve our liquidity, expand our business or acquire businesses. We cannot provide assurance that we will be able to secure funding necessary for additional working capital or these projects at reasonable terms, if at all.

Debt

We were in compliance with our debt covenants at December 31, 2020. Based on our forecasts, we believe we will maintain compliance at each of our subsidiaries for the next twelve months or have sufficient liquidity available on a consolidated basis to resolve noncompliance. We cannot provide assurance that actual results will approximate our forecasts or that we will inject the necessary capital into a subsidiary to maintain compliance with its respective covenants. In the event a subsidiary is unable to comply with its debt covenants, the subsidiary’s lenders may determine that an event of default has occurred, and following notice, the lenders may terminate the commitment and declare the unpaid balance due and payable.

As outlined in *Note 12 - Debt*, we use LIBOR as a reference rate for certain revolving credit facilities. LIBOR is currently set to be phased out at the end of 2021. At this time, it is not possible to predict the effect of this change or the alternative reference rate to be used. We will need to renegotiate certain credit facilities to determine the interest rate to replace LIBOR with the new standard that is established. As such, the potential effect of any such event on interest expense cannot yet be determined.

Corporate Activities

In 2019, we issued $115.0 million of 4.00% convertible senior notes due in 2024, or the 4.00% notes. The 4.00% notes are senior, unsecured obligations, with interest payable on January 1 and July 1 of each year, beginning January 1, 2020, at a rate of 4.00% per annum. The initial conversion rate will be 64.1540 shares of our common stock per $1,000 principal amount of the 4.00% notes, which is equivalent to an initial conversion price of approximately $15.59 per share of our common stock. The conversion rate will be subject to adjustment upon the occurrence of certain events. In addition, we may be obligated to increase the conversion rate for any conversion that occurs in connection with certain corporate events, including our calling the 4.00% notes for redemption. We may settle the 4.00% notes in cash, common stock or a combination of cash and common stock. At December 31, 2020, the outstanding principal balance was $89.1 million on the 4.00% notes.

In August 2016, we issued $170.0 million of 4.125% convertible senior notes due in 2022, or 4.125% notes, which are senior, unsecured obligations with interest payable on March 1 and September 1 of each year. Prior to March 1, 2022, the 4.125% notes are not convertible unless certain conditions are satisfied. The initial conversion rate is 35.7143 shares of common stock per $1,000 of principal which is equal to a conversion price of approximately $28.00 per share. The conversion rate is subject to adjustment upon the occurrence of certain events, including when the quarterly cash dividend exceeds $0.12 per share. We may settle the 4.125% notes in cash, common stock or a combination of cash and common stock. At December 31, 2020, the outstanding principal balance was $156.4 million on the 4.125% notes.

Agribusiness and Energy Services Segment

Green Plains Trade has a $300.0 million senior secured asset-based revolving credit facility to finance working capital up to the maximum commitment based on eligible collateral, which matures in July of 2022. This facility can be increased by up to $70.0 million with agent approval. Advances are subject to variable interest rates equal to a daily LIBOR rate plus 2.25% or the base rate plus 1.25%. The unused portion of the credit facility is also subject to a commitment fee of 0.375% per annum. At December 31, 2020, the outstanding principal balance was $79.3 million on the facility and the interest rate was 2.43%.

Green Plains Grain has a $100.0 million senior secured asset-based revolving credit facility to finance working capital up to the maximum commitment based on eligible collateral, which matures in June of 2022. This facility can be increased by an additional $75.0 million with agent approval and up to $50.0 million for seasonal borrowings. Total commitments outstanding under the facility cannot exceed $225.0 million. At December 31, 2020, the outstanding principal balance was $38.7 million and the interest rate was 3.65%.

Green Plains Grain has short-term inventory financing agreements with a financial institution with a maximum commitment of up to $50.0 million, which matures June 2022. Green Plains Grain has accounted for the agreements as short-term notes, rather than sales, and has elected the fair value option to offset fluctuations in market prices of the inventory. Green Plains Grain had no short-term notes payable related to these inventory financing agreements as of December 31, 2020.

Green Plains Commodity Management has an uncommitted $30.0 million revolving credit facility. The revolving credit facility, which matures April 30, 2023, is used to finance margins related to its hedging programs. Advances are subject to variable interest rates equal to LIBOR plus 1.75%. At December 31, 2020, the outstanding principal balance was $21.7 million and the interest rate was 1.85%.

Ethanol Production Segment

On September 3, 2020, Green Plains Wood River and Green Plains Shenandoah, wholly-owned subsidiaries of the company, entered into a $75.0 million delayed draw loan agreement, which matures on September 1, 2035. At December 31, 2020, the outstanding principal balance was $30.0 million on the loan and the interest rate was 6.52%. The loan is guaranteed by the company and has certain limitations on distributions, dividends or loans to Green Plains by Wood River and Shenandoah unless immediately after giving effect to such action, there will not exist any event of default.

We also have small equipment financing loans, capital leases on equipment or facilities, and other forms of debt financing.

Partnership Segment

Green Plains Partners, through a wholly owned subsidiary, has a credit facility to fund working capital, acquisitions, distributions, capital expenditures and other general partnership purposes. The credit facility was amended on June 4, 2020, decreasing the size of the facility from $200.0 million to $135.0 million. The amended credit facility includes a $130.0 million term loan and a $5.0 million revolving credit facility which matures on December 31, 2021. Payments of $30.0 million were made on the term loan principal during fiscal year 2020 including the proceeds of $10.0 million related to the sale of the Hereford, Texas ethanol plant. As of December 31, 2020, no additional prepayments on the term loan were required or paid. The term loan requires monthly principal payments of $2.5 million, with a step up to monthly payments of $3.2 million beginning May 15, 2021 through maturity. As of December 31, 2020, the term loan had a balance of $100.0 million and an interest rate of 6.00%, and there were no outstanding swing line loans.

In certain situations we are required to make prepayments on the outstanding principal balance on the credit facility. If at any time our cash balance exceeds $2.5 million for more than five consecutive business days, prepayments of outstanding principal are required in an amount equal to the excess cash. We are also required to prepay outstanding principal on the credit facility with 100% of net cash proceeds from any asset disposition or recovery event. Any prepayments on the term loan are applied to the remaining principal balance in inverse order of maturity, including the final payment.

While the partnership has not yet renegotiated the credit facility or secured additional funding necessary to repay the loan, the partnership believes it is probable that it will source appropriate funding given the partnership's consistent and stable fee-based cash flows, ongoing profitability, low leverage and history of obtaining financing on reasonable commercial terms. In the unlikely scenario that the partnership is unable to refinance its debt with the lenders prior to its maturity, the partnership will consider other financing sources, including but not limited to, the restructuring or issuance of new debt with a different lending group, the issuance of additional partnership units, other strategic actions to extinguish the debt, or support from the company.

Refer to *Note 12 – Debt* included as part of the notes to consolidated financial statements for more information about our debt.

Contractual Obligations

Contractual obligations as of December 31, 2020 were as follows (in thousands):

	Payments Due By Period				
Contractual Obligations	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
Long-term and short-term debt obligations (1)	$ 571,744	$ 241,121	$ 173,646	$ 118,623	$ 38,354
Interest and fees on debt obligations (2)	66,675	23,651	19,601	7,468	15,955
Operating lease obligations (3)	75,996	17,303	27,000	16,343	15,350
Other	24,224	4,644	5,171	6,865	7,544
Purchase obligations					
Forward grain purchase contracts (4)	190,541	188,004	1,890	647	-
Other commodity purchase contracts (5)	112,284	85,768	21,258	5,258	-
Other	521	357	138	26	-
Total contractual obligations	$ 1,041,985	$ 560,848	$ 248,704	$ 155,230	$ 77,203

(1) Includes the current portion of long-term debt and future finance lease obligations and excludes the effect of any debt discounts and issuance costs.
(2) Interest amounts are calculated over the terms of the loans using current interest rates, assuming scheduled principal and interest amounts are paid pursuant to the debt agreements. Includes administrative and/or commitment fees on debt obligations.
(3) Operating lease costs are primarily for railcars, land and office space and exclude leases not yet commenced with undiscounted future lease payments of approximately $6.5 million.
(4) Purchase contracts represent index-priced and fixed-price contracts. Index purchase contracts are valued at current year-end prices.
(5) Includes fixed-price ethanol, dried distillers grains and natural gas purchase contracts.

Item 7A. Qualitative and Quantitative Disclosures About Market Risk.

We use various financial instruments to manage and reduce our exposure to various market risks, including changes in commodity prices and interest rates. We conduct the majority of our business in U.S. dollars and are not currently exposed to material foreign currency risk.

Interest Rate Risk

We are exposed to interest rate risk through our loans which bear interest at variable rates. Interest rates on our variable-rate debt are based on the market rate for the lender's prime rate or LIBOR. A 10% increase in interest rates would affect our interest cost by approximately $0.9 million per year. At December 31, 2020, we had $526.2 million in debt, $237.4 million of which had variable interest rates.

Refer to *Note 12 – Debt* included as part of the notes to consolidated financial statements for more information about our debt.

Commodity Price Risk

Our business is highly sensitive to commodity price risk, particularly for ethanol, corn, distillers grains, corn oil and natural gas. Ethanol prices are sensitive to world crude oil supply and demand, the price of crude oil, gasoline, corn, the price of substitute fuels, refining capacity and utilization, government regulation and consumer demand for alternative fuels. Corn prices are affected by weather conditions, yield, changes in domestic and global supply and demand, and government programs and policies. Distillers grains prices are impacted by livestock numbers on feed, prices for feed alternatives and supply, which is associated with ethanol plant production. Natural gas prices are influenced by severe weather in the summer and winter and hurricanes in the spring, summer and fall. Other factors include North American energy exploration and production, and the amount of natural gas in underground storage during injection and withdrawal seasons.

To reduce the risk associated with fluctuations in the price of ethanol, corn, distillers grains, corn oil and natural gas, at times we use forward fixed-price physical contracts and derivative financial instruments, such as futures and options executed on the Chicago Board of Trade, the New York Mercantile Exchange and the Chicago Mercantile Exchange. We focus on locking in favorable operating margins, when available, using a model that continually monitors market prices for corn, natural gas and other inputs relative to the price for ethanol and distillers grains at each of our production facilities. We create offsetting positions using a combination of forward fixed-price purchases, sales contracts and derivative financial instruments. As a result, we frequently have gains on derivative financial instruments that are offset by losses on forward fixed-price physical contracts or inventories and vice versa. Our results are impacted by a mismatch of gains or losses associated with the derivative instrument during a reporting period when the physical commodity purchases or sale has not yet occurred. For the year ended December 31, 2020, revenues included net losses of $5.3 million and cost of goods sold included net gains of $27.0 million associated with derivative instruments.

Ethanol Production Segment

In the ethanol production segment, net gains and losses from settled derivative instruments are offset by physical commodity purchases or sales to achieve the intended operating margins. To reduce commodity price risk caused by market fluctuations, we enter into exchange-traded futures and options contracts that serve as economic hedges. Our results are impacted when there is a mismatch of gains or losses associated with the derivative instrument during a reporting period when the physical commodity purchases or sale has not yet occurred.

Our exposure to market risk, which includes the impact of our risk management activities resulting from our fixed-price purchase and sale contracts and derivatives, is based on the estimated net income effect resulting from a hypothetical 10% change in price for the next 12 months starting on December 31, 2020, are as follows (in thousands):

Commodity	Estimated Total Volume Requirements for the Next 12 Months (1)	Unit of Measure		Net Income Effect of Approximate 10% Change in Price
Ethanol	1,023,000	Gallons	$	100,273
Corn	354,000	Bushels	$	122,275
Distillers grains	2,500	Tons (2)	$	35,296
Corn Oil	276,000	Pounds	$	6,320
Natural gas	29,400	MMBTU	$	4,396

(1) Estimated volumes reflect anticipated expansion of production capacity at our ethanol plants and assumes production at full capacity.
(2) Distillers grains quantities are stated on an equivalent dried ton basis.

Agribusiness and Energy Services Segment

In the agribusiness and energy services segment, our inventories, physical purchase and sale contracts and derivatives are marked to market. To reduce commodity price risk caused by market fluctuations for purchase and sale commitments of grain and grain held in inventory, we enter into exchange-traded futures and options contracts that serve as economic hedges.

The market value of exchange-traded futures and options used for hedging are highly correlated with the underlying market value of grain inventories and related purchase and sale contracts for grain. The less correlated portion of inventory and purchase and sale contract market values, known as basis, is much less volatile than the overall market value of exchange-traded futures and tends to follow historical patterns. We manage this less volatile risk by constantly monitoring our position relative to the price changes in the market. Inventory values are affected by the month-to-month spread in the futures markets. These spreads are also less volatile than overall market value of our inventory and tend to follow historical patterns, but cannot be mitigated directly. Our accounting policy for futures and options, as well as the underlying inventory held for sale and purchase and sale contracts, is to reflect their current market values and include gains and losses in the consolidated statement of operations.

Our daily net commodity position consists of inventories related to purchase and sale contracts and exchange-traded contracts. The fair value of our position was approximately $0.2 million for grain at December 31, 2020. Our market risk at that date, based on the estimated net income effect resulting from a hypothetical 10% change in price, was approximately $18 thousand.

Item 8. Financial Statements and Supplementary Data.

The required consolidated financial statements and accompanying notes are listed in Part IV, Item 15.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure information that must be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to management, as appropriate, to allow timely decisions regarding required financial disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Under the supervision of and participation of our chief executive officer and chief financial officer, management carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2020, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act and concluded that our disclosure controls and procedures were effective.

Management's Annual Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining effective internal control over financial reporting as defined in Rule 13a-15(f) of the Exchange Act. Our internal control system is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with GAAP.

Under the supervision and participation of our chief executive officer and chief financial officer, management assessed the design and operating effectiveness of our internal control over financial reporting as of December 31, 2020, based on the *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. We completed the acquisition of Fluid Quip Technologies, LLC during fiscal year 2020. Our management excluded from its assessment of the effectiveness of the company's internal control over financial reporting as of December 31, 2020, the acquired businesses' internal control over financial reporting associated with the acquired assets which represent approximately 3% of the company's consolidated total assets and approximately 0% of the company's consolidated total revenues as of and for the year ended December 31, 2020. Based on this assessment, management concluded that our internal control over financial reporting was effective as of December 31, 2020.

The effectiveness of the company's internal control over financial reporting as of December 31, 2020, has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

Changes in Internal Control over Financial Reporting

Management is responsible for establishing and maintaining effective internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of our consolidated financial statements for external purposes in accordance with GAAP. We have not identified any changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2020, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Green Plains Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Green Plains Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the consolidated financial statements), and our report dated February 16, 2021 expressed an unqualified opinion on those consolidated financial statements.

The Company acquired Fluid Quip Technologies, LLC during 2020, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2020, Fluid Quip Technologies, LLC's internal control over financial reporting associated with total assets of 3% and total revenues of 0% included in the consolidated financial statements of the Company as of and for the year ended December 31, 2020. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of Fluid Quip Technologies, LLC.

Basis for Opinion

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

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ KPMG LLP

Omaha, Nebraska
February 16, 2021

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Information in our Proxy Statement for the 2021 Annual Meeting of Stockholders (“Proxy Statement”) under “Corporate Governance,” “Proposal 1 – Election of Directors,” “Our Management,” and “Section 16(a) Beneficial Ownership Reporting Compliance” is incorporated by reference.

We have adopted a code of ethics that applies to our chief executive officer, chief financial officer and all other senior financial officers. Our code of ethics is available on our website at *www.gpreinc.com* in the “Investors – Corporate Governance” section. Amendments or waivers are disclosed within five business days following its adoption.

Item 11. Executive Compensation.

Information included in the Proxy Statement under “Corporate Governance” and “Executive Compensation” is incorporated by reference.

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

Information in the Proxy Statement under “Security Ownership of Certain Beneficial Owners and Management” and “Executive Compensation” is incorporated by reference.

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

Information in the Proxy Statement under “Transactions with Related Persons, Promoters and Certain Control Persons” is incorporated by reference.

Item 14. Principal Accounting Fees and Services.

Information in the Proxy Statement under “Independent Public Accountants” is incorporated by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(1) Financial Statements. The following consolidated financial statements and notes are filed as part of this annual report on Form 10-K.

	Page
Report of Independent Registered Public Accounting Firm	F-1
Consolidated Balance Sheets as of December 31, 2020 and 2019	F-3
Consolidated Statements of Operations for the years-ended December 31, 2020, 2019 and 2018	F-4
Consolidated Statements of Comprehensive Income for the years-ended December 31, 2020, 2019 and 2018	F-5
Consolidated Statements of Stockholders' Equity for the years-ended December 31, 2020, 2019 and 2018	F-6
Consolidated Statements of Cash Flows for the years-ended December 31, 2020, 2019 and 2018	F-7
Notes to Consolidated Financial Statements	F-9

(2) Financial Statement Schedules. All schedules have been omitted because they are not applicable or the required information is included in the consolidated financial statements or notes thereto.

(3) Exhibits. The following exhibits are incorporated by reference, filed or furnished as part of this annual report on Form 10-K.

Exhibit Index

Exhibit No.	Description of Exhibit
2.1	Membership Interest Purchase Agreement between Murphy Oil USA, Inc. and Green Plains Inc. dated October 28, 2015 (certain exhibits and disclosure schedules to this agreement have been omitted; Green Plains will furnish such exhibits and disclosure schedules to the SEC upon request) (incorporated herein by reference to Exhibit 2.1 to the company's Current Report on Form 8-K dated November 12, 2015)
2.2	Asset Purchase Agreement, dated as of July 27, 2018, by and among Green Plains Cattle Company LLC, and Bartlett Cattle Company, L.P. (incorporated herein by reference to Exhibit 2.1 of the company's Current Report on Form 8-K filed on August 1, 2018)
2.3(a)	Asset Purchase Agreement among Green Plains Bluffton LLC, Green Plains Holdings II LLC, Green Plains Inc. and Valero Renewable Fuels Company, LLC, dated October 8, 2018. (incorporated by reference to Exhibit 2.1 of our Current Report on Form 8-K filed on October 10, 2018). (The schedules to the Asset Purchase Agreement have been omitted. The company will furnish such schedules to the SEC upon request.)
2.3(b)	Asset Purchase Agreement among Green Plains Partners LP, Green Plains Holdings LLC, Green Plains Operating Company LLC, Green Plains Ethanol Storage LLC, Green Plains Logistics LLC, Green Plains Inc., Green Plains Trade Group LLC, Green Plains Bluffton LLC and Green Plains Holdings II LLC (incorporated by reference to Exhibit 2.2 of our Current Report on Form 8-K filed on October 10, 2018). (The schedules to the Asset Purchase Agreement have been omitted. The Partnership will furnish such schedules to the SEC upon request).
2.4	Asset Purchase Agreement, dated as of April 25, 2017, by and among Green Plains Cattle Company LLC, and Cargill Cattle Feeders, LLC. (incorporated herein by reference to Exhibit 2.1 to the company's Current Report on Form 8-K dated April 26, 2017)
2.5	Stock Purchase Agreement among Green Plains Inc., Green Plains II LLC and Kerry Holding Co. dated October 23, 2018. (The schedules to the Stock Purchase Agreement have been omitted. The Company will furnish such schedules to the SEC upon request.) (incorporated herein by reference to Exhibit 2.1 of the company's Current Report on Form 8-K filed October 25, 2018)
2.6	Securities Purchase Agreement, dated as of September 6, 2019, by and among Green Plains Inc., Green Plains Cattle Company LLC, TGAM Agribusiness Fund Holdings-B LP, and StepStone Atlantic Fund, L.P. (Certain schedules to the Securities Purchase Agreement have been omitted. The company will furnish such schedules to the SEC upon request.) (incorporated herein by reference to Exhibit 2.1 of the company's Current Report on Form 8-K filed September 9, 2019)

2.7	Second Amended and Restated Limited Liability Company Agreement of Green Plains Cattle Company LLC, dated September 6, 2019 (Certain schedules to the Second Amended and Restated Limited Liability Company Agreement have been omitted. The company will furnish such schedules to the SEC upon request.) (incorporated herein by reference to Exhibit 10.1 of the company's Current Report on Form 8-K filed September 9, 2019)
2.8	Securities Purchase Agreement, dated as of October 9, 2020, by and among Green Plains Inc., Green Plains Cattle Company LLC, AGR Special Opportunities Fund I, LP, TGAM Agribusiness Fund LP, and StepStone Atlantic Fund, LP (incorporated herein by reference to Exhibit 2.1 to the company's Current Report on Form 8-K filed on October 13, 2020) (Certain schedules to the Securities Purchase Agreement have been omitted. The company will furnish such schedules to the SEC upon request)
2.9(a)	Asset Purchase Agreement among Hereford Ethanol Partners, L.P. and Green Plains Hereford LLC, dated December 11, 2020. (The schedules to the Asset Purchase Agreement have been omitted. The Company will furnish such schedules to the SEC upon request.)
2.9(b)	Asset Purchase Agreement, dated December 14, 2020, by and among Green Plains Partners LP, Green Plains Holdings LLC, Green Plains Operating Company LLC, Green Plains Ethanol Storage LLC, Green Plains Logistics LLC, Green Plains Inc., Green Plains Trade Group LLC and Green Plains Hereford LLC. (incorporated herein by reference to Exhibit 2.2 to the company's Current Report on Form 8-K filed on December 15, 2020)
2.10 (a)	Asset Purchase Agreement, dated January 25, 2021, by and among Green Plains Partners LP, Green Plains Holdings LLC, Green Plains Operating Company LLC, Green Plains Ethanol Storage LLC, Green Plains Logistics LLC, Green Plains Inc., Green Plains Trade Group LLC and Green Plains Ord LLC. (incorporated herein by reference to Exhibit 2.1 to the company's Current Report on Form 8-K filed on January 27, 2021)
3.1(a)	Second Amended and Restated Articles of Incorporation of the company (incorporated herein by reference to Exhibit 3.1 of the company's Current Report on Form 8-K filed October 15, 2008)
3.1(b)	Articles of Amendment to Second Amended and Restated Articles of Incorporation of Green Plains Renewable Energy, Inc. (incorporated herein by reference to Exhibit 3.1 of the company's Current Report on Form 8-K filed May 9, 2011)
3.1(c)	Second Articles of Amendment to Second Amended and Restated Articles of Incorporation of Green Plains Renewable Energy, Inc. (incorporated herein by reference to Exhibit 3.1 of the company's Current Report on Form 8-K filed May 16, 2014)
3.2	Third Amended and Restated Bylaws of Green Plains Inc., dated October 1, 2020 (incorporated herein by reference to Exhibit 3.1 to the company's Current Report on Form 8-K filed on October 5, 2020)
4.1	Shareholders' Agreement by and among Green Plains Renewable Energy, Inc., each of the investors listed on Schedule A, and each of the existing shareholders and affiliates identified on Schedule B, dated May 7, 2008 (incorporated herein by reference to Appendix F of the company's Registration Statement on Form S-4/A filed September 4, 2008)
4.2	Indenture relating to the 4.125% Convertible Senior Notes due 2022, dated as of August 15, 2016, between Green Plains Inc. and Wilmington Trust, National Association, including the form of Global Note attached as Exhibit A thereto (incorporated herein by reference to Exhibit 4.1 to the company's Current Report on Form 8-K filed August 15, 2016)
4.3	Indenture relating to the 3.25% Convertible Senior Notes due 2019, dated as of August 14, 2018, between Green Plains Inc. and Wilmington Trust, National Association, as trustee (including therein Form of 3.25% Convertible Senior Notes Due 2019) (incorporated herein by reference to Exhibit 4.1 to the company's Current Report on Form 8-K filed August 14, 2018)
4.4	Indenture relating to the 4.00% Convertible Senior Notes due 2024, dated as of June 21, 2019, between Green Plains Inc. and Wilmington Trust, National Association, including the form of Global Note attached as Exhibit A thereto (incorporated herein by reference to Exhibit 4.1 of the company's Current Report on Form 8-K filed on June 21, 2019)
4.5	Description of Securities Registered Under Section 12 of the Exchange Act (incorporated herein by reference to Exhibit 4.7 of the company's Annual Report on Form 10-K filed February 20, 2020)
*10.1	2007 Equity Incentive Plan (incorporated herein by reference to Appendix A of the company's Definitive Proxy Statement filed March 27, 2007)

10.2	Form of Indemnification Agreement (incorporated herein by reference to Exhibit 10.53 of the company's Registration Statement on Form S-4/A filed August 1, 2008)
*10.3(a)	Employment Agreement with Todd Becker (incorporated herein by reference to Exhibit 10.54 of the company's Registration Statement on Form S-4/A filed August 1, 2008)
*10.3(b)	Amendment No. 1 to Employment Agreement with Todd Becker, dated December 18, 2009. (incorporated herein by reference to Exhibit 10.7(b) of the company's Annual Report on Form 10-K filed February 24, 2010)
*10.3(c)	Amendment No. 2 to Employment Agreement with Todd Becker, dated March 27, 2018 (incorporated herein by reference to Exhibit 10.52 of the company's Quarterly Report on Form 10-Q filed on May 7, 2018)
*10.4(a)	2009 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.1 of the company's Current Report on Form 8-K dated May 11, 2009)
*10.4(b)	Amendment No. 1 to the 2009 Equity Incentive Plan (incorporated herein by reference to Appendix A of the company's Definitive Proxy Statement filed March 25, 2011)
*10.4(c)	Amendment No. 2 to the 2009 Equity Incentive Plan (incorporated herein by reference to Appendix A of the company's Definitive Proxy Statement filed March 29, 2013)
*10.4(d)	Amended and Restated 2009 Equity Incentive Plan (incorporated herein by reference to Exhibit 99.1 of the company's Registration Statement on Form S-8 filed June 23, 2017)
*10.4(e)	Form of Stock Option Award Agreement for 2009 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.19(b) of the company's Annual Report on Form 10-K filed February 24, 2010)
*10.4(f)	Form of Restricted Stock Award Agreement for 2009 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.19(c) of the company's Annual Report on Form 10-K/A (Amendment No. 1) filed February 25, 2010)
*10.4(g)	Amended Form of Restricted Stock Award agreement for 2009 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.53 of the company's Quarterly Report on Form 10-Q filed on May 7, 2018)
*10.4(h)	Form of Deferred Stock Unit Award Agreement for 2009 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.19(d) of the company's Annual Report on Form 10-K filed February 24, 2010)
*10.4(i)	Form of Performance Share Unit Award agreement for 2009 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.54 of the company's Quarterly Report on Form 10-Q filed on May 7, 2018)
*10.4(j)	2019 Equity Incentive Plan (incorporated herein by reference to Appendix A of the company's Definitive Proxy Statement filed March 28, 2019)
*10.4(k)	Amendment No. 1 to the 2019 Equity Incentive Plan (incorporated herein by reference to Appendix A of the company's Definitive Proxy Statement filed March 26, 2020)
10.5(a)	Second Amended and Restated Revolving Credit and Security Agreement dated April 26, 2013 by and among Green Plains Trade Group LLC and PNC Bank, National Association (as Lender and Agent) (incorporated herein by reference to Exhibit 10.2 of the company's Quarterly Report on Form 10-Q filed May 2, 2013)
10.5(b)	Third Amended and Restated Revolving Credit and Security Agreement dated November 26, 2014 by and among Green Plains Trade Group LLC, the Lenders and PNC Bank, National Association (as Lender and Agent) (incorporated herein by reference to Exhibit 10.1 of the company's Current Report on Form 8-K filed December 2, 2014)
10.5(c)	Fourth Amended and Restated Revolving Credit and Security Agreement dated July 28, 2017, among Green Plains Trade Group LLC, the Lenders and PNC Bank, National Association as Lender and Agent (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated July 31, 2017)
10.5(d)	First Amendment to Fourth Amended and Restated Revolving Credit and Security Agreement, dated as of August 29, 2017, among Green Plains Trade Group LLC and PNC Bank, National Association, as agent, and the lenders party to the Credit and Security Agreement (incorporated herein by reference to Exhibit 10.4(a) to the company's Current Report on Form 8-K dated August 29, 2017)

10.5(e)	Second Amendment to Fourth Amended and Restated Revolving Credit and Security Agreement, dated as of March 15, 2018, by and among Green Plains Trade Group LLC and PNC Bank, National Association (incorporated herein by reference to Exhibit 10.1 to the company's Quarterly Report on Form 10-Q dated May 7, 2018)
10.5(f)	Third Amendment to Fourth Amended and Restated Revolving Credit and Security Agreement, dated as of November 27, 2019, by and among Green Plains Trade Group LLC and PNC Bank, National Association (incorporated herein by reference to Exhibit 10.5(f) of the company's Annual Report on Form 10-K filed February 20, 2020)
10.5(g)	Revolving Credit Note dated April 26, 2013 by and among Green Plains Trade Group LLC and Citibank, N.A. (incorporated herein by reference to Exhibit 10.2(b) of the company's Quarterly Report on Form 10-Q filed May 2, 2013)
10.5(h)	Revolving Credit Note dated April 26, 2013 by and among Green Plains Trade Group LLC and BMO Harris Bank N.A. (incorporated herein by reference to Exhibit 10.2(c) of the company's Quarterly Report on Form 10-Q filed May 2, 2013)
10.5(i)	Revolving Credit Note dated April 26, 2013 by and among Green Plains Trade Group LLC and Alostar Bank of Commerce (incorporated herein by reference to Exhibit 10.2(d) of the company's Quarterly Report on Form 10-Q filed May 2, 2013)
10.5(j)	Second Amended and Restated Credit Note dated April 26, 2013 by and among Green Plains Trade Group LLC and PNC Bank, National Association (Incorporated by reference to Exhibit 10.2(a) of the company's Quarterly Report on Form 10-Q filed May 2, 2013)
10.5(k)	Revolving Credit Note dated April 26, 2013 by and among Green Plains Trade Group LLC and Bank of America (incorporated here by reference to Exhibit 10.2(e) of the company's Quarterly Report on Form 10-Q filed May 2, 2013)
10.5(l)	ABL Intercreditor Agreement, dated as of August 29, 2017, among PNC Bank, National Association, as ABL Collateral Agent, and BNP Paribas, as Term Loan Collateral Agent, and acknowledged by Green Plains Trade Group LLC and the other ABL Grantors (incorporated herein by reference to Exhibit 10.4(b) to the company's Current Report on Form 8-K dated August 29, 2017)
10.5(m)	Guaranty, dated as of August 29, 2017, in favor of PNC Bank, National Association, as agent (incorporated herein by reference to Exhibit 10.4(c) to the company's Current Report on Form 8-K dated August 29, 2017)
*10.6	Umbrella Short-Term Incentive Plan (incorporated herein by reference to Appendix A of the company's Proxy Statement filed April 3, 2014)
*10.7	Director Compensation effective May 11, 2016 (incorporated herein by reference to Exhibit 10.4 of the company's Quarterly Report on Form 10-Q filed August 3, 2016)
*10.8	Director Compensation effective November 14, 2017 (incorporated herein by reference to Exhibit 10.9 of the company's Annual Report on Form 10-K filed February 15, 2018)
10.9(a)	Credit Agreement dated October 28, 2011 by and among Green Plains Grain Company LLC, Green Plains Grain Company TN LLC, Green Plains Essex Inc., BNP Paribas Securities Corp. as Lead Arranger, Rabo Agrifinance, Inc. as Syndication Agent, ABN AMRO Capital USA LLC as Documentation Agent and BNP Paribas as Administrative Agent (incorporated herein by reference to Exhibit 10.1 of the company's Current Report on Form 8-K filed November 3, 2011)
10.9(b)	Security Agreement dated October 28, 2011 by and among Green Plains Grain Company LLC, Green Plains Grain Company TN LLC, Green Plains Essex Inc. and BNP Paribas (incorporated herein by reference to Exhibit 10.2 of the company's Current Report on Form 8-K filed November 3, 2011)
10.9(c)	Promissory Note dated October 28, 2011 by and among Green Plains Grain Company LLC, Green Plains Grain Company TN LLC, Green Plains Essex Inc. and Bank of Oklahoma (incorporated herein by reference to Exhibit 10.3 of the company's Current Report on Form 8-K filed November 3, 2011)
10.9(d)	Promissory Note dated October 28, 2011 by and among Green Plains Grain Company LLC, Green Plains Grain Company TN LLC, Green Plains Essex Inc. and U.S. Bank National Association (incorporated herein by reference to Exhibit 10.4 of the company's Current Report on Form 8-K filed November 3, 2011)

10.9(e)	Promissory Note dated October 28, 2011 by and among Green Plains Grain Company LLC, Green Plains Grain Company TN LLC, Green Plains Essex Inc. and Farm Credit Bank of Texas (incorporated herein by reference to Exhibit 10.5 of the company's Current Report on Form 8-K filed November 3, 2011)
10.9(f)	First Amendment to Credit Agreement dated January 6, 2012 by and among Green Plains Grain Company LLC, Green Plains Grain Company TN LLC, Green Plains Essex Inc., BNP Paribas and the Required Lenders (incorporated herein by reference to Exhibit 10.26(k) of the company's Annual Report on Form 10-K filed February 17, 2012)
10.9(g)	Second Amendment to Credit Agreement, dated October 26, 2012, by and among Green Plains Grain Company LLC, Green Plains Grain Company TN LLC, Green Plains Essex, Inc., BNP Paribas, as the administrative agent under the Credit Agreement, and the lenders party to the Credit Agreement (incorporated herein by reference to Exhibit 10.5 of the company's Quarterly Report on Form 10-Q filed November 1, 2012)
10.9(h)	Third Amendment to Credit Agreement, dated August 27, 2013, by and among Green Plains Grain Company LLC, Green Plains Grain Company TN LLC, Green Plains Essex, Inc., BNP Paribas, as the administrative agent under the Credit Agreement, and the lenders party to the Credit Agreement (incorporated herein by reference to Exhibit 10.3 of the company's Quarterly Report on Form 10-Q filed October 31, 2013)
10.9(i)	Fourth Amendment to Credit Agreement, dated August 8, 2014, by and among Green Plains Grain Company LLC (including in its capacity as successor by merger to Green Plains Essex Inc.), Green Plains Grain Company TN LLC, BNP Paribas, as the administrative agent under the Credit Agreement, and the lenders party to the Credit Agreement (incorporated herein by reference to Exhibit 10.3 of the company's Quarterly Report on Form 10-Q filed October 30, 2014)
10.9(j)	Fifth Amendment to Credit Agreement, dated June 1, 2015, by and among Green Plains Grain Company LLC (including in its capacity as successor by merger to Green Plains Essex Inc.), Green Plains Grain Company TN LLC, BNP Paribas, as the administrative agent under the Credit Agreement, and the lenders party to the Credit Agreement (incorporated herein by reference to Exhibit 10.5 of the company's Quarterly Report on Form 10-Q filed August 3, 2016)
10.9(k)	Sixth Amendment to Credit Agreement, dated January 5, 2016, by and among Green Plains Grain Company LLC (including in its capacity as successor by merger to Green Plains Essex Inc.), Green Plains Grain Company TN LLC, BNP Paribas, as the administrative agent under the Credit Agreement, and the lenders party to the Credit Agreement (incorporated herein by reference to Exhibit 10.6 of the company's Quarterly Report on Form 10-Q filed August 3, 2016)
10.9(l)	Seventh Amendment to Credit Agreement, dated July 27, 2016, by and among Green Plains Grain Company LLC (including in its capacity as successor by merger to Green Plains Essex Inc.), Green Plains Grain Company TN LLC, BNP Paribas, as the administrative agent under the Credit Agreement, and the lenders party to the Credit Agreement (incorporated herein by reference to Exhibit 10.7 of the company's Quarterly Report on Form 10-Q filed August 3, 2016)
10.9(m)	Eighth Amendment to Credit Agreement, dated as of August 29, 2017, among Green Plains Grain Company and BNP Paribas, as Administrative Agent, and the lenders party to the Credit Agreement (incorporated herein by reference to Exhibit 10.3(a) to the company's Current Report on Form 8-K dated August 29, 2017)
10.9(n)	Ninth Amendment to Credit Agreement, dated as of June 28, 2019, among Green Plains Grain Company LLC and BNP Paribas, as Administrative Agent, and the lenders party to the Credit Agreement (incorporated herein by reference to Exhibit 10.1 of the company's Current Report on Form 8-K filed on July 1, 2019)
10.9(o)	ABL Intercreditor Agreement, dated as of August 29, 2017, among BNP Paribas, as ABL Collateral Agent, and BNP Paribas, as Term Loan Collateral Agent, and acknowledged by Green Plains Grain Company LLC and the other ABL Grantors (incorporated herein by reference to Exhibit 10.3(b) to the company's Current Report on Form 8-K dated August 29, 2017)
10.9(p)	Guaranty, dated as of August 29, 2017, in favor of BNP Paribas, as administrative agent (incorporated herein by reference to Exhibit 10.3(c) to the company's Current Report on Form 8-K dated August 29, 2017)

*10.10	Employment Agreement by and between Green Plains Renewable Energy, Inc. and Patrich Simpkins dated April 1, 2012 (incorporated herein by reference to Exhibit 10.2 of the company's Quarterly Report on Form 10-Q filed May 1, 2014)
*10.11	Employment Agreement with Michelle S. Mapes (incorporated herein by reference to Exhibit 10.12 of the company's Annual Report on Form 10-K filed February 20, 2020)
10.12	Amended and Restated Credit Agreement, dated as of August 28, 2019, by and among Green Plains Cattle Company LLC, Bank of the West and ING Capital LLC, as Joint Administrative Agents, and the lenders party to the Credit Agreement (Certain schedules to the Amended and Restated Credit Agreement have been omitted. The company will furnish such schedules to the SEC upon request.) (incorporated herein by reference to Exhibit 10.3 of the company's Current Report on Form 8-K filed September 9, 2019)
10.13	Contribution, Conveyance and Assumption Agreement, dated July 1, 2015, by and among Green Plains Inc., Green Plains Obion LLC, Green Plains Trucking LLC, Green Plains Holdings LLC, Green Plains Partners LP and Green Plains Operating Company LLC (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated July 6, 2015)
10.14(a)	Omnibus Agreement, dated July 1, 2015, by and among Green Plains Inc., Green Plains Holdings LLC, Green Plains Partners LP and Green Plains Operating Company LLC (incorporated herein by reference to Exhibit 10.2 to the company's Current Report on Form 8-K dated July 6, 2015)
10.14(b)	First Amendment to the Omnibus Agreement, dated January 1, 2016, by and among Green Plains Inc., Green Plains Holdings LLC, Green Plains Partners LP and Green Plains Operating Company LLC (incorporated herein by reference to Exhibit 10.22(b) to the company's Annual Report on Form 10-K for the year ended December 31, 2015)
10.14(c)	Second Amendment to the Omnibus Agreement, dated September 23, 2016, by and among Green Plains Inc., Green Plains Partners LP, Green Plains Holdings LLC and Green Plains Operating Company LLC (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated September 26, 2016)
10.14(d)	Third Amendment to the Omnibus Agreement, dated November 15, 2018, by and among Green Plains Inc., Green Plains Partners LP, Green Plains Holdings LLC and Green Plains Operating Company LLC (incorporated herein by reference to Exhibit 10.18(d) to the company's Annual Report on Form 10-K for the year ended December 31, 2018)
10.15(a)	Operational Services and Secondment Agreement, dated July 1, 2015, by and between Green Plains Inc. and Green Plains Holdings LLC (incorporated herein by reference to Exhibit 10.3 to the company's Current Report on Form 8-K dated July 6, 2015)
10.15(b)	Amendment No. 1 to the Operational Services and Secondment Agreement, dated January 1, 2016, by and between Green Plains Inc. and Green Plains Holdings LLC (incorporated herein by reference to Exhibit 10.23(b) to the company's Annual Report on Form 10-K for the year ended December 31, 2015)
10.15(c)	Amendment No. 2 to Operational Services and Secondment Agreement, dated September 23, 2016, between Green Plains Inc. and Green Plains Holdings LLC (incorporated herein by reference to Exhibit 10.2 to the company's Current Report on Form 8-K dated September 26, 2016)
10.15(d)	Amendment No. 3 to Operational Services and Secondment Agreement, dated November 15, 2018, between Green Plains Inc. and Green Plains Holdings LLC (incorporated herein by reference to Exhibit 10.19(d) to the company's Annual Report on Form 10-K for the year ended December 31, 2018)
10.15(e)	Amendment No. 4 to Operational Services and Secondment Agreement, dated December 28, 2020, between Green Plains Inc. and Green Plains Holdings LLC (incorporated herein by reference to Exhibit 10.3 to the company's Current Report on Form 8-K filed December 28, 2020)
10.16(a)	Rail Transportation Services Agreement, dated July 1, 2015, by and between Green Plains Logistics LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.4 to the company's Current Report on Form 8-K dated July 6, 2015)
10.16(b)	Amendment No. 1 to Rail Transportation Services Agreement, dated September 1, 2015, by and between Green Plains Logistics LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.1 of the company's Quarterly Report on Form 10-Q filed August 3, 2016)

10.16(c)	Correction to Rail Transportation Services Agreement, dated May 12, 2016, by and between Green Plains Logistics LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.3 of the company's Quarterly Report on Form 10-Q filed August 3, 2016)
10.16(d)	Amendment No. 2 to Rail Transportation Services Agreement, dated November 30, 2016 (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated December 1, 2016)
10.16(e)	Amendment No. 3 to Rail Transportation Services Agreement, dated November 15, 2018 (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated November 15, 2018)
10.16(f)	Corrective Amendment to Rail Transportation Services Agreement, dated November 15, 2018, by and between Green Plains Logistics LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.20(f) to the company's Annual Report on Form 10-K for the year ended December 31, 2018)
10.16(g)	Amendment No. 4 to Rail Transportation Services Agreement, dated December 28, 2020 (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K dated December 28, 2020
10.17(a)	Ethanol Storage and Throughput Agreement, dated July 1, 2015, by and between Green Plains Ethanol Storage LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.5 to the company's Current Report on Form 8-K dated July 6, 2015)
10.17(b)	Amendment No. 1 to the Ethanol Storage and Throughput Agreement, dated January 1, 2016, by and between Green Plains Ethanol Storage LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.25(b) to the company's Annual Report on Form 10-K for the year ended December 31, 2015)
10.17(c)	Clarifying Amendment to Ethanol Storage and Throughput Agreement, dated January 4, 2016, by and between Green Plains Ethanol Storage LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.2 of the company's Quarterly Report on Form 10-Q filed August 3, 2016)
10.17(d)	Amendment No. 2 to Ethanol Storage and Throughput Agreement, dated September 23, 2016, by and between Green Plains Ethanol Storage LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.3 to the company's Current Report on Form 8-K dated September 26, 2016)
10.17(e)	Amendment No. 3 to Ethanol Storage and Throughput Agreement, dated November 15, 2018, by and between Green Plains Ethanol Storage LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.2 to the company's Current Report on Form 8-K dated November 15, 2018) (The exhibits to Amendment No. 3 have been omitted. The company will furnish such schedules to the SEC upon request).
10.17(f)	Amendment No. 4 to Ethanol Storage and Throughput Agreement, dated December 28, 2020, by and between Green Plains Ethanol Storage LLC and Green Plains Trade Group LLC (incorporated herein by reference to Exhibit 10.2 to the company's Current Report on Form 8-K dated December 28, 2020)
10.18(a)	Credit Agreement, dated July 1, 2015, by and among Green Plains Operating Company LLC, as the Borrower, the subsidiaries of the Borrower identified therein, Bank of America, N.A., and the other lenders party thereto (incorporated herein by reference to Exhibit 10.6 to the company's Current Report on Form 8-K dated July 6, 2015)
10.18(b)	First Amendment to Credit Agreement, dated September 16, 2016 by and among Green Plains Operating Company LLC, as the Borrower, the subsidiaries of the Borrower identified therein, Bank of America, N.A., and the other lenders party thereto (incorporated herein by reference to Exhibit 10.22(b) to the company's Annual Report on Form 10-K for the year ended December 31, 2018)
10.18(c)	Incremental Joinder Agreement, dated October 27, 2017, among Green Plains Operating Company LLC and Bank of America, as Administrative (incorporated herein by reference to Exhibit 10.8 to the company's Quarterly Report on Form 10-Q dated November 2, 2017)
10.18(d)	Second Amendment to Credit Agreement, dated February 16, 2018 by and among Green Plains Operating Company LLC, as the Borrower, the subsidiaries of the Borrower identified therein, Bank of America, N.A., and the other lenders party thereto (incorporated herein by reference to Exhibit 10.22(d) to the company's Annual Report on Form 10-K for the year ended December 31, 2018)

10.18(e)	Incremental Joinder Agreement, dated February 20, 2018, among Green Plains Operating Company LLC and Bank of America, as Administrative (incorporated herein by reference to Exhibit 10.22(e) to the company's Annual Report on Form 10-K for the year ended December 31, 2018)
10.18(f)	Third Amendment to Credit Agreement, dated October 12, 2018 by and among Green Plains Operating Company LLC, as the Borrower, the subsidiaries of the Borrower identified therein, Bank of America, N.A., and the other lenders party thereto (incorporated herein by reference to Exhibit 10.22(f) to the company's Annual Report on Form 10-K for the year ended December 31, 2018)
10.18(g)	Consent to Credit Agreement, dated July 15, 2019, by and among Green Plains Operating Company LLC and Bank of America, as Administrative Agent (incorporated herein by reference to Exhibit 10.1 to the company's Quarterly Report on Form 10-Q dated August 6, 2019)
10.18(h)	Fourth Amendment to Credit Agreement, dated June 4, 2020, by and among Green Plains Operating Company LLC, as the Borrower, the subsidiaries of the Borrower identified therein, Bank of America, N.A. and the other lenders party thereto (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K filed on June 4, 2020)
10.19	Second Amendment to Term Loan Agreement, dated July 13, 2018, among Green Plains Inc. and BNP Paribas, as administrative agent and collateral agent (incorporated herein by reference to Exhibit 10.3 to the company's Quarterly Report on Form 10-Q dated August 2, 2018)
10.20	Partial Release of Security Interest, dated as of April 30, 2018, by and among Green Plains Inc., its subsidiaries and BNP Paribas, as collateral agent (incorporated herein by reference to Exhibit 10.3 to the company's Quarterly Report on Form 10-Q dated May 7, 2018)
10.21(a)	Revolving Credit Facility, dated as of April 30, 2018, by and among Green Plains Commodity Management LLC and Macquarie Bank Limited (incorporated herein by reference to Exhibit 10.4 to the company's Quarterly Report on Form 10-Q dated May 7, 2018)
10.21(b)	Amendment to Revolving Credit Facility, dated as of June 18, 2019, by and among Green Plains Commodity Management LLC and Macquarie Bank Limited (incorporated herein by reference to Exhibit 10.24(b) of the company's Annual Report on Form 10-K filed February 20, 2020)
10.22	Promissory Note between Green Plains Inc. and StepStone Atlantic Fund, L.P., dated September 6, 2019 (incorporated herein by reference to Exhibit 10.2 of the company's Current Report on Form 8-K filed September 9, 2019)
10.23(a)	Loan Agreement dated September 3, 2020 by and among Green Plains Wood River LLC and Green Plains Shenandoah LLC, as the Borrowers, and MetLife Real Estate Lending LLC, as the Lender (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K filed on September 8, 2020)
10.23(b)	Delayed Draw Term Promissory Note dated September 3, 2020 by and among Green Plains Wood River LLC and Green Plains Shenandoah LLC, as the Borrowers, and MetLife Real Estate Lending LLC, as the Lender (incorporated herein by reference to Exhibit 10.2 to the company's Current Report on Form 8-K filed on September 8, 2020)
10.23(c)	Loan Guaranty Agreement dated September 3, 2020 by and among Green Plains Inc, as the Guarantor, and MetLife Real Estate Lending LLC, as the Lender (incorporated herein by reference to Exhibit 10.3 to the company's Current Report on Form 8-K filed on September 8, 2020)
10.23(d)	Deed of Trust, Security Agreement, Assignment of Leases and Rents and Fixture Filing dated September 3, 2020 by and among Green Plains Wood River LLC, as the Trustor, and MetLife Real Estate Lending LLC, as the Beneficiary (incorporated herein by reference to Exhibit 10.4 to the company's Current Report on Form 8-K filed on September 8, 2020)
10.23(e)	Mortgage, Security Agreement, Assignment of Leases and Rents and Fixture Filing dated September 3, 2020 by and among Green Plains Shenandoah LLC, as the Borrower, and MetLife Real Estate Lending LLC, as the Lender (incorporated herein by reference to Exhibit 10.5 to the company's Current Report on Form 8-K filed on September 8, 2020)
10.24(a)	Note Purchase Agreement dated February 9, 2021 by and among Green Plains SPE LLC, as the Issuer, Green Plains Inc., as Guarantor, and Purchasers signatory thereto. (The schedules to the Note Purchase Agreement have been omitted. The Company will furnish such schedules to the SEC upon request.) (incorporated herein by reference to Exhibit 10.1 to the company's Current Report on Form 8-K filed on February 12, 2021)

10.24(b)	Pledge and Security Agreement dated February 9, 2021 by and among Green Plains SPE LLC, as the Pledgor, in favor of Wilmington Trust, National Association, as Trustee. (The schedules to the Pledge and Security Agreement have been omitted. The Company will furnish such schedules to the SEC upon request.) (incorporated herein by reference to Exhibit 10.2 to the company's Current Report on Form 8-K filed on February 12, 2021)
10.24(c)	Indenture dated February 9, 2021 by Green Plains SPE LLC, as Issuer, Green Plains Inc., as Guarantor and Wilmington Trust, National Association, as Trustee. (The schedules to the Indenture have been omitted. The Company will furnish such schedules to the SEC upon request.) (incorporated herein by reference to Exhibit 10.3 to the company's Current Report on Form 8-K filed on February 12, 2021)
10.24(d)	First Priority Mortgage, Assignment of Leases and Rents, Security Agreement and Financing Statement from Green Plains Mount Vernon LLC, as Mortgagor and Wilmington Trust, National Association, as Mortgagee. (incorporated herein by reference to Exhibit 10.4 to the company's Current Report on Form 8-K filed on February 12, 2021)
10.24(e)	First Priority Deed of Trust, Assignment of Leases and Rents, Security Agreement and Financing Statement from Green Plains Obion LLC, as Mortgagor and Wilmington Trust, National Association, as Mortgagee. (incorporated herein by reference to Exhibit 10.5 to the company's Current Report on Form 8-K filed on February 12, 2021)
21.1	Schedule of Subsidiaries
23.1	Consent of KPMG LLP
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and Section 302 of the Sarbanes-Oxley Act of 2002
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	The following information from Green Plains Inc.'s Annual Report on Form 10-K for the annual period ended December 31, 2020, formatted in Inline Extensible Business Reporting Language (iXBRL): (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Operations, (iii) the Consolidated Statements of Comprehensive Income (iv) the Consolidated Statements of Stockholders' Equity (v) the Consolidated Statements of Cash Flows and (vi) the Notes to Consolidated Financial Statements and Financial Statement Schedule.
104	The cover page from Green Plains Inc. Annual Report on Form 10-K for the year ended December 31, 2020, formatted in iXBRL

* Represents management compensatory contracts

Item 16. Form 10-K Summary.

None.

SIGNATURES

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

GREEN PLAINS INC
(Registrant)

Date: February 16, 2021

By: */s/ Todd A. Becker*
Todd A. Becker
President and Chief Executive Officer
(Principal Executive Officer)

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

Signature	Title	Date
/s/ Todd A. Becker Todd A. Becker	President and Chief Executive Officer (Principal Executive Officer) and Director	February 16, 2021
/s/ G. Patrich Simpkins Jr. G. Patrich Simpkins Jr.	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	February 16, 2021
/s/ Wayne B. Hoovestol Wayne B. Hoovestol	Chairman of the Board	February 16, 2021
/s/ Jim Anderson Jim Anderson	Director	February 16, 2021
/s/ James F. Crowley James F. Crowley	Director	February 16, 2021
/s/ S. Eugene Edwards S. Eugene Edwards	Director	February 16, 2021
/s/ Gordon F. Glade Gordon F. Glade	Director	February 16, 2021
/s/ Ejnar A. Knudsen III Ejnar A. Knudsen III	Director	February 16, 2021
/s/ Thomas L. Manuel Thomas L. Manuel	Director	February 16, 2021
/s/ Brian D. Peterson Brian D. Peterson	Director	February 16, 2021
/s/ Alain Treuer Alain Treuer	Director	February 16, 2021
/s/ Kimberly Wagner Kimberly Wagner	Director	February 16, 2021

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Green Plains Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Green Plains Inc. and subsidiaries (the Company) as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 16, 2021 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 18 to the consolidated financial statements, the Company changed its method of accounting for leases as of January 1, 2019 due to the adoption of ASC Topic 842, *Leases*.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Fair value of physical delivery contracts

As discussed in Note 2 to the consolidated financial statements, the Company records physical delivery contracts that do not meet the normal purchase or sale criteria at fair value. The Company estimates a fair value based on exchange-quoted prices, adjusted as appropriate for regional location basis values, which represent differences in local markets including transportation as well as quality or grade differences. Basis values are generally determined using inputs from broker quotations or market transactions. As of December 31, 2020, the recorded balances of the Company's derivative assets and liabilities associated with physical delivery contracts were $22.0 million and $11.0 million, respectively, and are classified as Level 2 assets and liabilities within Note 6.

We identified the assessment of the valuation of physical delivery contracts as a critical audit matter. Specifically, auditing the valuation of physical delivery contracts, which includes assumptions related to exchange-quoted prices and adjustments for regional location basis values, is complex due to the judgment involved in determining the fair value.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of internal controls related to the valuation of physical delivery contracts. To assess the valuation of physical delivery contracts, for a sample of contracts, we:

- tested the Company's exchange-quoted price by comparing the amount used to observable market transactions
- evaluated the Company's adjustments for regional location basis values by comparing inputs used by the Company to third-party information, including broker quotations or market transactions.

/s/ KPMG LLP

We have served as the Company's auditor since 2009.

Omaha, Nebraska
February 16, 2021

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except share amounts)

	December 31,	
	2020	2019
ASSETS		
Current assets		
Cash and cash equivalents	$ 233,860	$ 245,977
Restricted cash	40,950	23,919
Accounts receivable, net of allowances of $143 and $166, respectively	55,568	107,183
Income taxes receivable	661	6,216
Inventories	269,491	252,992
Prepaid expenses and other	16,531	13,685
Derivative financial instruments	25,292	17,941
Total current assets	642,353	667,913
Property and equipment, net	801,690	827,271
Operating lease right-of-use assets	61,883	52,476
Investment in equity method investees	3,994	68,998
Other assets	68,997	81,560
Total assets	$ 1,578,917	$ 1,698,218
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 140,058	$ 156,693
Accrued and other liabilities	38,471	39,384
Derivative financial instruments	20,265	8,721
Operating lease current liabilities	14,902	16,626
Short-term notes payable and other borrowings	140,808	187,812
Current maturities of long-term debt	98,052	132,555
Total current liabilities	452,556	541,791
Long-term debt	287,299	243,990
Operating lease long-term liabilities	49,549	38,314
Other liabilities	12,849	8,837
Total liabilities	802,253	832,932
Commitments and contingencies (Note 18)		
Stockholders' equity		
Common stock, $0.001 par value; 75,000,000 shares authorized; 47,470,505 and 46,964,115 shares issued, and 35,657,344 and 36,031,933 shares outstanding, respectively	47	47
Additional paid-in capital	740,889	734,580
Retained earnings	39,375	148,150
Accumulated other comprehensive loss	(2,172)	(11,064)
Treasury stock, 11,813,161 and 10,932,182 shares, respectively	(131,287)	(119,808)
Total Green Plains stockholders' equity	646,852	751,905
Noncontrolling interests	129,812	113,381
Total stockholders' equity	776,664	865,286
Total liabilities and stockholders' equity	$ 1,578,917	$ 1,698,218

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share amounts)

	Year Ended December 31,		
	2020	2019	2018
Revenues			
Product revenues	$ 1,918,884	$ 2,410,382	$ 2,977,451
Service revenues	4,835	6,856	6,481
Total revenues	1,923,719	2,417,238	2,983,932
Costs and expenses			
Cost of goods sold (excluding depreciation and amortization expenses reflected below)	1,812,163	2,384,947	2,806,968
Operations and maintenance expenses	26,125	25,657	30,844
Selling, general and administrative expenses	84,932	77,077	108,259
Loss (gain) on sale of assets, net	20,860	-	(150,351)
Goodwill impairment	24,091	-	-
Depreciation and amortization expenses	78,244	72,127	98,258
Total costs and expenses	2,046,415	2,559,808	2,893,978
Operating income (loss) from continuing operations	(122,696)	(142,570)	89,954
Other income (expense)			
Interest income	659	4,333	2,961
Interest expense	(39,993)	(40,200)	(87,449)
Other, net	900	5,495	178
Total other expense	(38,434)	(30,372)	(84,310)
Income (loss) from continuing operations before income taxes and income (loss) from equity method investees	(161,130)	(172,942)	5,644
Income tax benefit	50,383	21,316	20,147
Income (loss) from equity method investees, net of income taxes	21,093	2,797	(596)
Net income (loss) from continuing operations including noncontrolling interest	(89,654)	(148,829)	25,195
Net income from discontinued operations, net of income taxes	-	829	11,539
Net income (loss)	(89,654)	(148,000)	36,734
Net income attributable to noncontrolling interests	19,121	18,860	20,811
Net income (loss) attributable to Green Plains	$ (108,775)	$ (166,860)	$ 15,923
Earnings (loss) per share - basic and diluted			
Net income (loss) from continuing operations	$ (3.14)	$ (4.40)	$ 0.11
Net income from discontinued operations	-	0.02	0.28
Net income (loss) attributable to Green Plains	$ (3.14)	$ (4.38)	$ 0.39
Weighted average shares outstanding:			
Basic	34,631	38,111	40,320
Diluted	34,631	38,111	41,254

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Year Ended December 31,		
	2020	2019	2018
Net income (loss)	$ (89,654)	$ (148,000)	$ 36,734
Other comprehensive income (loss), net of tax:			
Unrealized gains (losses) on derivatives arising during the period, net of tax benefit (expense) of $257, ($14,431) and $2,854, respectively	(768)	55,973	(6,788)
Reclassification of realized losses (gains) on derivatives, net of tax expense (benefit) of $857, $10,002 and ($2,887), respectively	(2,566)	(38,795)	6,669
Other comprehensive income (loss), net of tax	(3,334)	17,178	(119)
Share of equity method investees other comprehensive gain (loss) arising during the period, net of tax benefit (expense) of ($3,929), $3,929 and $0, respectively	12,226	(12,226)	-
Total other comprehensive income (loss), net of tax	8,892	4,952	(119)
Comprehensive income (loss)	(80,762)	(143,048)	36,615
Comprehensive income attributable to noncontrolling interests	19,121	18,860	20,811
Comprehensive income (loss) attributable to Green Plains	$ (99,883)	$ (161,908)	$ 15,804

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accum. Other Comp. Income (Loss)	Treasury Stock		Total Green Plains Stockholders' Equity	Non-Control. Interests	Total Stockholders' Equity
	Shares	Amount				Shares	Amount			
Balance, December 31, 2017	46,410	$ 46	$ 685,019	$ 325,411	$ (13,110)	5,326	$ (55,184)	$ 942,182	$ 116,954	$ 1,059,136
Reclassification of certain tax effects from other comprehensive loss (Note 1)	-	-	-	2,787	(2,787)	-	-	-	-	-
Balance, January 1, 2018	46,410	46	685,019	328,198	(15,897)	5,326	(55,184)	942,182	116,954	1,059,136
Net income	-	-	-	15,923	-	-	-	15,923	20,811	36,734
Cash dividends and distributions declared	-	-	-	(19,393)	-	-	-	(19,393)	(21,872)	(41,265)
Other comprehensive loss before reclassification	-	-	-	-	(6,788)	-	-	-	-	-
Amounts reclassified from accum. other comp. loss	-	-	-	-	6,669	-	-	-	-	-
Other comp. loss, net of tax	-	-	-	-	(119)	-	-	(119)	-	(119)
Repurchase of common stock	-	-	-	-	-	210	(2,979)	(2,979)	-	(2,979)
Modification of 3.25% convertible notes due 2019	-	-	3,480	-	-	-	-	3,480	-	3,480
Exchange of 3.25% convertible notes due 2018	-	-	-	-	-	-	1	1	-	1
Stock-based compensation	213	1	7,573	-	-	-	-	7,574	277	7,851
Stock options exercised	15	-	150	-	-	-	-	150	-	150
Balance, December 31, 2018	46,638	47	696,222	324,728	(16,016)	5,536	(58,162)	946,819	116,170	1,062,989
Net income (loss)	-	-	-	(166,860)	-	-	-	(166,860)	18,860	(148,000)
Cash dividends and distributions declared	-	-	-	(9,718)	-	-	-	(9,718)	(21,968)	(31,686)
Other comp. income before reclassification	-	-	-	-	55,973	-	-	-	-	-
Amounts reclassified from accum. other comp. loss	-	-	-	-	(38,795)	-	-	-	-	-
Other comprehensive income, net of tax	-	-	-	-	17,178	-	-	17,178	-	17,178
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	(12,226)	-	-	(12,226)	-	(12,226)
Proceeds from disgorgement of shareholders short-swing profits, net of tax	-	-	5,054	-	-	-	-	5,054	-	5,054
Issuance of 4.00% convertible notes due 2024, net of tax	-	-	24,928	-	-	-	-	24,928	-	24,928
Settlements of 3.25% convertible notes due 2019, net of tax	-	-	(271)	-	-	-	-	(271)	-	(271)
Repurchase of common stock	-	-	-	-	-	5,396	(61,646)	(61,646)	-	(61,646)
Stock-based compensation	207	-	7,052	-	-	-	-	7,052	319	7,371
Stock options exercised	119	-	1,595	-	-	-	-	1,595	-	1,595
Balance, December 31, 2019	46,964	47	734,580	148,150	(11,064)	10,932	(119,808)	751,905	113,381	865,286
Net income (loss)	-	-	-	(108,775)	-	-	-	(108,775)	19,121	(89,654)
Cash dividends and distributions declared	-	-	-	-	-	-	-	-	(9,675)	(9,675)
Other comprehensive loss before reclassification	-	-	-	-	(768)	-	-	-	-	-
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	(2,566)	-	-	-	-	-
Other comprehensive income, net of tax	-	-	-	-	(3,334)	-	-	(3,334)	-	(3,334)
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	12,226	-	-	12,226	-	12,226
Acquisition of FQT	-	-	-	-	-	-	-	-	6,667	6,667
Repurchase of common stock	-	-	-	-	-	881	(11,479)	(11,479)	-	(11,479)
Stock-based compensation	507	-	6,309	-	-	-	-	6,309	318	6,627
Balance, December 31, 2020	47,471	$ 47	$ 740,889	$ 39,375	$ (2,172)	11,813	$ (131,287)	$ 646,852	$ 129,812	$ 776,664

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2020	2019	2018
Cash flows from operating activities:			
Net income (loss) from continuing operations including noncontrolling interest	$ (89,654)	$ (148,829)	$ 25,195
Net income from discontinued operations, net of income taxes	-	829	11,539
Net income (loss)	(89,654)	(148,000)	36,734
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	78,244	72,127	98,258
Amortization of debt issuance costs and debt discount	22,500	20,364	13,277
Loss (gain) on the disposal of assets, net	21,464	(3,680)	(150,351)
Goodwill impairment	24,091	-	-
Write-off of deferred financing fees related to extinguishment of debt	-	-	13,178
Deferred income taxes	(13,336)	(17,252)	(24,484)
Stock-based compensation	7,915	9,692	11,420
Loss (income) from equity method investees, net of income taxes	(21,093)	(2,797)	596
Distribution from equity method investees, net of income taxes	27,910	-	-
Other	-	-	(11,604)
Changes in operating assets and liabilities before effects of business combinations and dispositions:			
Accounts receivable	57,060	(21,762)	43,443
Inventories	(21,632)	50,022	26,972
Derivative financial instruments	1,274	12,420	(12,294)
Prepaid expenses and other assets	(2,105)	793	1,907
Accounts payable and accrued liabilities	(22,772)	(1,778)	(53,565)
Current income taxes	30,073	3,138	31,517
Other	(1,044)	(288)	4,526
Net cash provided by (used in) operating activities - continuing operations	98,895	(27,001)	29,530
Net cash provided by operating activities - discontinued operations	-	17,469	9,437
Net cash provided by (used in) operating activities	98,895	(9,532)	38,967
Cash flows from investing activities:			
Purchases of property and equipment, net	(110,579)	(75,481)	(40,529)
Proceeds from sale of discontinued operations, net of cash divested	-	76,884	-
Proceeds from the sale of assets, net	39,952	3,469	671,650
Disposition of equity method investee	80,500	29,721	-
Acquisition of businesses, net of cash acquired	(21,325)	-	-
Distributions from (contribution to) equity method investees	-	220	(3,091)
Other investing activities	-	-	7,500
Net cash provided by (used in) investing activities - continuing operations	(11,452)	34,813	635,530
Net cash used in investing activities - discontinued operations	-	(4,169)	(128,065)
Net cash provided by (used in) investing activities	(11,452)	30,644	507,465
Cash flows from financing activities:			
Proceeds from the issuance of long-term debt	33,000	157,710	83,100
Payments of principal on long-term debt	(12,987)	(45,702)	(576,389)
Proceeds from short-term borrowings	2,392,258	2,802,199	3,479,784
Payments on short-term borrowings	(2,468,485)	(2,840,505)	(3,578,629)
Payments for repurchase of common stock	(11,479)	(61,646)	(2,978)
Payments of cash dividends and distributions	(9,675)	(31,686)	(41,265)
Proceeds from disgorgement of shareholder short-swing profits	-	6,699	-
Payments of loan fees	(3,873)	(5,291)	(3,808)
Payments related to tax withholdings for stock-based compensation	(1,288)	(2,320)	(3,569)
Proceeds from exercises of stock options	-	1,595	150
Net cash used in financing activities - continuing operations	(82,529)	(18,947)	(643,604)
Net cash provided by (used in) financing activities - discontinued operations	-	(50,464)	103,007
Net cash used in financing activities	(82,529)	(69,411)	(540,597)
Net change in cash, cash equivalents and restricted cash	4,914	(48,299)	5,835
Cash, cash equivalents and restricted cash, beginning of period	269,896	283,284	289,667
Discontinued operations cash activity included above:			
Add: Cash balance included in current assets of discontinued operations at beginning of period	-	34,911	22,693
Less: Cash balance included in current assets of discontinued operations at end of period	-	-	(34,911)
Cash, cash equivalents and restricted cash, end of period	$ 274,810	$ 269,896	$ 283,284

Continued on the following page

GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

Continued from the previous page

	Year Ended December 31,		
	2020	2019	2018
Reconciliation of total cash, cash equivalents and restricted cash:			
Cash and cash equivalents	$ 233,860	$ 245,977	$ 251,683
Restricted cash	40,950	23,919	66,512
Discontinued operations cash activity included above:			
Less: Cash, cash equivalents and restricted cash balance included in current assets of discontinued operations at end of period	-	-	(34,911)
Total cash, cash equivalents and restricted cash	$ 274,810	$ 269,896	$ 283,284
Non-cash financing activity:			
Settlement of NMTC transaction	$ -	$ 8,100	$ -
Modification of 3.25% convertible notes due 2019, net	$ -	$ -	$ 3,480
Exchange of common stock held in treasury stock for 3.25% convertible notes due 2018	$ -	$ -	$ 1
Supplemental investing and financing activities:			
Assets acquired in acquisitions, net of cash	$ 42,443	$ -	$ 124,525
Less: liabilities assumed	(14,451)	-	(118)
Less: noncontrolling interests assumed	(6,667)	-	-
Net assets acquired	$ 21,325	$ -	$ 124,407
Assets disposed of in sale	$ 67,711	$ 527,614	$ 550,648
Less: liabilities disposed	(6,234)	(373,846)	(41,276)
Net assets disposed	$ 61,477	$ 153,768	$ 509,372
Supplemental disclosures of cash flow:			
Cash paid (refunded) for income taxes	$ (60,587)	$ 563	$ (22,478)
Cash paid for interest of continuing operations	$ 23,300	$ 24,287	$ 60,664
Cash paid for interest of discontinued operations	$ -	$ 11,557	$ 12,481

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. BASIS OF PRESENTATION AND DESCRIPTION OF BUSINESS

References to the Company

References to "Green Plains" or the "company" in the consolidated financial statements and in these notes to the consolidated financial statements refer to Green Plains Inc., an Iowa corporation, and its subsidiaries.

Consolidated Financial Statements

The consolidated financial statements include the company's accounts and all significant intercompany balances and transactions are eliminated. Unconsolidated entities are included in the financial statements on an equity basis. As of December 31, 2020, the company owns a 48.9% limited partner interest and a 2.0% general partner interest in Green Plains Partners LP. Public investors own the remaining 49.1% limited partner interest in the partnership. The company determined that the limited partners in the partnership with equity at risk lack the power, through voting rights or similar rights, to direct the activities that most significantly impact partnership's economic performance; therefore, the partnership is considered a variable interest entity. The company, through its ownership of the general partner interest in the partnership, has the power to direct the activities that most significantly affect economic performance and is obligated to absorb losses and has the right to receive benefits that could be significant to the partnership. Therefore, the company is considered the primary beneficiary and consolidates the partnership in the company's financial statements. The assets of the partnership cannot be used by the company for general corporate purposes. The partnership's consolidated total assets as of December 31, 2020 and 2019, excluding intercompany balances, are $91.2 million and $90.0 million, respectively, and primarily consist of property and equipment, operating lease right-of-use assets and goodwill. The partnership's consolidated total liabilities as of December 31, 2020 and 2019, excluding intercompany balances, are $151.2 million and $180.9 million, respectively, which primarily consist of current maturities of long-term debt as discussed in *Note 12 – Debt* and operating lease liabilities. The liabilities recognized as a result of consolidating the partnership do not represent additional claims on our general assets.

GPCC, previously a wholly owned subsidiary of Green Plains, was disposed of during the third quarter of 2019. After closing, GPCC was no longer consolidated in the company's consolidated financial statements and the GPCC investment was accounted for using the equity method of accounting. Additionally, the company concluded that the disposition of GPCC met the requirements under ASC 205-20 *Presentation of Financial Statements – Discontinued Operations* ("ASC 205-20") to be presented as discontinued operations. As such, GPCC results prior to its disposition are classified as discontinued operations in prior period consolidated financial statements.

Additionally, on October 1, 2020, pursuant to the Securities Purchase Agreement, the company sold its remaining 50% joint venture interest in GPCC to AGR, TGAM Agribusiness Fund LP and StepStone. The transaction resulted in a reduction in investment in equity method investees of $69.7 million as a result of removal of the equity method investment in GPCC, and a reduction in accumulated other comprehensive income (loss) of $10.7 million as a result of the removal of the company's share of equity method investees accumulated other comprehensive loss. See *Note 5 - Acquisitions, Dispositions and Discontinued Operations* and *Note 21 – Equity Method Investments* for further details.

The company also owns a 90.0% interest in BioProcess Algae, a joint venture formed in 2008, as well as a majority interest in Fluid Quip Technologies, LLC with their results being consolidated in our consolidated financial statements.

Use of Estimates in the Preparation of Consolidated Financial Statements

The preparation of consolidated financial statements in conformity with GAAP requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. The company bases its estimates on historical experience and assumptions it believes are proper and reasonable under the circumstances and regularly evaluates the appropriateness of its estimates and assumptions. Actual results could differ from those estimates. Key accounting policies, including but not limited to those relating to revenue recognition, carrying value of intangible assets, operating leases, impairment of long-lived assets and goodwill, derivative financial instruments, accounting for income taxes and assets acquired and liabilities assumed in acquisitions, are impacted significantly by judgments, assumptions and estimates used in the preparation of the consolidated financial statements.

Description of Business

The company operates within four business segments: (1) ethanol production, which includes the production of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil and included vinegar production until the sale of Fleischmann's Vinegar during the fourth quarter of 2018 and (4) partnership, which includes fuel storage and transportation services.

Ethanol Production Segment

Green Plains is one of the largest ethanol producers in North America. The company operates 12 ethanol plants in six states through separate wholly owned operating subsidiaries. The company's ethanol plants use a dry mill process to produce ethanol and co-products such as wet, modified wet or dried distillers grains, as well as corn oil. The corn oil systems are designed to extract non-edible corn oil from the whole stillage immediately prior to production of distillers grains. At capacity, the company expects to process approximately 354 million bushels of corn and produce approximately 1.0 billion gallons of ethanol, 2.5 million tons of distillers grains and 276 million pounds of industrial grade corn oil annually.

Agribusiness and Energy Services Segment

The company owns and operates grain handling and storage assets through its agribusiness and energy services segment, which has grain storage capacity of approximately 38.1 million bushels, with 30.5 million bushels of storage capacity at the company's ethanol plants and 7.6 million bushels of total storage capacity at its three grain elevators. The company's agribusiness operations provide synergies with the ethanol production segment as it supplies a portion of the feedstock needed to produce ethanol. The company has an in-house marketing business that is responsible for the sale, marketing and distribution of all ethanol, distillers grains and corn oil produced at its ethanol plants. The company also purchases and sells ethanol, distillers grains, corn oil, grain, natural gas and other commodities and participates in other merchant trading activities in various markets.

Food and Ingredients Segment

The company has food-grade corn oil operations which focus on shipping corn oil from facilities across the Midwest by rail or barge to terminal facilities located in the southern United States. Until its sale on November 27, 2018, the company also owned Fleischmann's Vinegar, which is one of the world's largest producers of food-grade industrial vinegar.

Partnership Segment

The company's partnership segment provides fuel storage and transportation services by owning, operating, developing and acquiring ethanol and fuel storage tanks, terminals, transportation assets and other related assets and businesses. As of December 31, 2020, the partnership owns (i) 31 ethanol storage facilities located at or near the company's 12 operational ethanol production plants and one non-operational ethanol production plant, which have the ability to efficiently and effectively store and load railcars and tanker trucks with all of the ethanol produced at the company's ethanol production plants, (ii) six fuel terminal facilities, located near major rail lines, which enable the partnership to receive, store and deliver fuels from and to markets that seek access to renewable fuels, and (iii) transportation assets, including a leased railcar fleet of approximately 2,480 railcars which is utilized to transport ethanol from the company's ethanol production plants to refineries throughout the United States and international export terminals.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Cash and Cash Equivalents

Cash and cash equivalents includes bank deposits as well as short-term, highly liquid investments with original maturities of three months or less.

Restricted Cash

The company has restricted cash, which can only be used for funding letters of credit or for payment towards a credit agreement. Restricted cash also includes cash margins and securities pledged to commodity exchange clearinghouses and at times, funds in escrow related to acquisition and disposition activities. To the degree these segregated balances are cash and cash equivalents, they are considered restricted cash on the consolidated balance sheets.

Revenue Recognition

The company recognizes revenue when obligations under the terms of a contract with a customer are satisfied. Generally this occurs with the transfer of control of products or services. Revenue is measured as the amount of consideration expected to be received in exchange for transferring goods or providing services. Sales, value add, and other taxes the company collects concurrent with revenue-producing activities are excluded from revenue.

Sales of ethanol, distillers grains, corn oil, natural gas and other commodities by the company’s marketing business are recognized when obligations under the terms of a contract with a customer are satisfied. Generally, this occurs with the transfer of control of products or services. Revenues related to marketing for third parties are presented on a gross basis as the company controls the product prior to the sale to the end customer, takes title of the product and has inventory risk. Unearned revenue is recorded for goods in transit when the company has received payment but control has not yet been transferred to the customer. Revenues for receiving, storing, transferring and transporting ethanol and other fuels are recognized when the product is delivered to the customer.

The company routinely enters into physical-delivery energy commodity purchase and sale agreements. At times, the company settles these transactions by transferring its obligations to other counterparties rather than delivering the physical commodity. Energy trading transactions are reported net as a component of revenue. Revenues include net gains or losses from derivatives related to products sold while cost of goods sold includes net gains or losses from derivatives related to commodities purchased. Revenues also include realized gains and losses on related derivative financial instruments and reclassifications of realized gains and losses on cash flow hedges from accumulated other comprehensive income or loss.

Sales of products, including agricultural commodities, are recognized when control of the product is transferred to the customer, which depends on the agreed upon shipment or delivery terms. Revenues related to grain merchandising are presented gross and include shipping and handling, which is also a component of cost of goods sold. Revenues from grain storage are recognized over time as the services are rendered.

A substantial portion of the partnership revenues are derived from fixed-fee commercial agreements for storage, terminal or transportation services. The partnership recognizes revenue upon transfer of control of product from its storage tanks and fuel terminals, when railcar volumetric capacity is provided, and as truck transportation services are performed. To the extent shortfalls associated with minimum volume commitments in the previous four quarters continue to exist, volumes in excess of the minimum volume commitment are applied to those shortfalls. Remaining excess volumes generating operating lease revenue are recognized as incurred.

Shipping and Handling Costs

The company accounts for shipping and handling activities related to contracts with customers as costs to fulfill its promise to transfer the associated products. Accordingly, the company records customer payments associated with shipping and handling costs as a component of revenue, and classifies such costs as a component of cost of goods sold.

Cost of Goods Sold

Cost of goods sold includes direct labor, materials, shipping and plant overhead costs. Direct labor includes all compensation and related benefits of non-management personnel involved in ethanol production and vinegar production until the sale of Fleischmann’s Vinegar during the fourth quarter of 2018. Grain purchasing and receiving costs, excluding labor costs for grain buyers and scale operators, are also included in cost of goods sold. Materials include the cost of corn feedstock, denaturant, and process chemicals. Corn feedstock costs include gains and losses on related derivative financial instruments not designated as cash flow hedges, inbound freight charges, inspection costs and transfer costs, as well as reclassifications of gains and losses on cash flow hedges from accumulated other comprehensive income or loss. Plant overhead consists primarily of plant utilities, repairs and maintenance and outbound freight charges. Shipping costs incurred by the company, including railcar costs, are also reflected in cost of goods sold.

The company uses exchange-traded futures and options contracts and forward purchase and sale contracts to attempt to minimize the effect of price changes on ethanol, grain and natural gas. Exchange-traded futures and options contracts are valued at quoted market prices and settled predominantly in cash. The company is exposed to loss when counterparties default on forward purchase and sale contracts. Grain inventories held for sale and forward purchase and sale contracts are valued at market prices when available or other market quotes adjusted for basis differences, primarily in transportation, between the exchange-traded market and local market where the terms of the contract is based. Changes in forward purchase contracts and exchange-traded futures and options contracts are recognized as a component of cost of goods sold.

Operations and Maintenance Expenses

In the partnership segment, transportation expenses represent the primary component of operations and maintenance expenses. Transportation expenses include railcar leases, freight and shipping of the company's ethanol and co-products, as well as costs incurred storing ethanol at destination terminals.

Derivative Financial Instruments

The company uses various derivative financial instruments, including exchange-traded futures and exchange-traded and over-the-counter options contracts, to attempt to minimize risk and the effect of commodity price changes including but not limited to, corn, ethanol, natural gas and crude oil. The company monitors and manages this exposure as part of its overall risk management policy to reduce the adverse effect market volatility may have on its operating results. The company may hedge these commodities as one way to mitigate risk; however, there may be situations when these hedging activities themselves result in losses.

By using derivatives to hedge exposures to changes in commodity prices, the company is exposed to credit and market risk. The company's exposure to credit risk includes the counterparty's failure to fulfill its performance obligations under the terms of the derivative contract. The company minimizes its credit risk by entering into transactions with high quality counterparties, limiting the amount of financial exposure it has with each counterparty and monitoring their financial condition. Market risk is the risk that the value of the financial instrument might be adversely affected by a change in commodity prices or interest rates. The company manages market risk by incorporating parameters to monitor exposure within its risk management strategy, which limits the types of derivative instruments and strategies the company can use and the degree of market risk it can take using derivative instruments.

The company evaluates its physical delivery contracts to determine if they qualify for normal purchase or sale exemptions which are expected to be used or sold over a reasonable period in the normal course of business. Contracts that do not meet the normal purchase or sale criteria are recorded at fair value. Changes in fair value are recorded in operating income unless the contracts qualify for, and the company elects, cash flow hedge accounting treatment.

Certain qualifying derivatives related to ethanol production and agribusiness and energy services are designated as cash flow hedges. The company evaluates the derivative instrument to ascertain its effectiveness prior to entering into cash flow hedges. Unrealized gains and losses are reflected in accumulated other comprehensive income or loss until the gain or loss from the underlying hedged transaction is realized and the physical transaction is completed. When it becomes probable a forecasted transaction will not occur, the cash flow hedge treatment is discontinued, which affects earnings. These derivative financial instruments are recognized in current assets or current liabilities at fair value.

At times, the company hedges its exposure to changes in inventory values and designates qualifying derivatives as fair value hedges. The carrying amount of the hedged inventory is adjusted in the current period for changes in fair value. Estimated fair values carried at market are based on exchange-quoted prices, adjusted as appropriate for regional location basis values which represent differences in local markets including transportation as well as quality or grade differences. Basis values are generally determined using inputs from broker quotations or other market transactions. However a portion of the value may be derived using unobservable inputs. Ineffectiveness of the hedges is recognized in the current period to the extent the change in fair value of the inventory is not offset by the change in fair value of the derivative.

Concentrations of Credit Risk

The company is exposed to credit risk resulting from the possibility that another party may fail to perform according to the terms of the company's contract. The company sells ethanol, corn oil and distillers grains and markets products for third parties, which can result in concentrations of credit risk from a variety of customers, including major integrated oil companies, large independent refiners, petroleum wholesalers and other marketers. The company also sells grain to large commercial buyers, including other ethanol plants. Although payments are typically received within fifteen days of the sale, the company continually monitors its exposure. The company is also exposed to credit risk on prepayments of undelivered inventories with a few major suppliers of petroleum products and agricultural inputs.

The company has master netting arrangements with various counterparties. On the consolidated balance sheets, the associated net amount for each counterparty is reflected as either an accounts receivable or accounts payable. If the amount for each counterparty were reflected on a gross basis, the company's accounts receivable and accounts payable would increase by $1.1 million and $1.2 million at December 31, 2020 and 2019, respectively.

Inventories

Corn held for ethanol production, ethanol, corn oil and distillers grains inventories are recorded at the lower of average cost or net realizable value.

Other grain inventories include readily marketable grain, forward contracts to buy and sell grain, and exchange traded futures and option contracts, which are all stated at market value. All grain inventories held for sale are marked to market. Changes are reflected in cost of goods sold. The forward contracts require performance in future periods. Contracts to purchase grain generally relate to current or future crop years for delivery periods quoted by regulated commodity exchanges. Contracts for the sale of grain to processors or other consumers generally do not extend beyond one year. The terms of the purchase and sale agreements for grain are consistent with industry standards. Raw materials and finished goods inventories are valued at the lower of average cost or net realizable value.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Depreciation is generally calculated using the straight-line method over the following estimated useful life of the assets:

	Years
Plant, buildings and improvements	10-40
Production equipment	15-40
Other machinery and equipment	5-7
Land improvements	20
Railroad track and equipment	20
Computer hardware and software	3-5
Office furniture and equipment	5-7

Property and equipment is capitalized at cost. Land improvements and other property improvements are capitalized and depreciated. Costs of repairs and maintenance are charged to expense when incurred. The company periodically evaluates whether events and circumstances have occurred that warrant a revision of the estimated useful life of its fixed assets.

Intangible Assets

Our intangible assets consist primarily of customer relationships, intellectual property, research and development technology and licenses. These intangible assets were capitalized at fair market value and are being amortized over their estimated useful lives.

Impairment of Long-Lived Assets

The company reviews its long-lived assets, currently consisting of property and equipment, operating lease right-of-use assets, intangible assets and equity method investments, for impairment whenever events or changes in circumstances indicate the carrying amount of the asset may not be recoverable. Recoverability of assets to be held and used is measured by comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset. Significant management judgment is required to determine the fair value of our long-lived assets and measure impairment, which includes projected cash flows. Fair value is determined by using various valuation techniques, including discounted cash flow models, sales of comparable properties and third-party independent appraisals. Changes in estimated fair value could result in an impairment of the asset. There were no material impairment charges recorded for the periods reported.

Goodwill

Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. The determination of goodwill takes into consideration the fair value of net tangible and intangible assets. The company’s goodwill is related to certain acquisitions within our ethanol production and partnership segments.

On January 1, 2018, the company early adopted the amended guidance in ASC 350, *Intangibles – Goodwill and Other: Simplifying the Test for Goodwill Impairment*, which simplifies the measurement of goodwill by eliminating Step 2 from the goodwill impairment test. Under the amended guidance, an entity may first assess qualitative factors to determine whether it

is necessary to perform a quantitative goodwill impairment test. If determined to be necessary, the quantitative impairment test shall be used to identify goodwill impairment and measure the amount of a goodwill impairment loss to be recognized (if any).

The company is required to perform impairment tests related to goodwill annually, which it performs as of October 1, or sooner if an indicator of impairment occurs. Circumstances that may indicate impairment include a decline in the company's future projected cash flows, a decision to suspend plant operations for an extended period of time, sustained decline in the company's market capitalization or market prices for similar assets or businesses, or a significant adverse change in legal or regulatory matters or business climate. Significant management judgment is required to determine the fair value of goodwill and measure impairment, which include, but are not limited to, market capitalization, prospective financial information, growth rates, discount rates, inflationary factors, and cost of capital. Fair value is determined by using various valuation techniques, including discounted cash flow models, sales of comparable properties and third-party independent appraisals. Changes in estimated fair value could result in a write-down of the asset.

Near term industry outlook due to the significant decrease in crude oil prices, lower gasoline demand, general uncertainty due to the COVID-19 outbreak and the subsequent decline in our stock price caused a decline in the company's market capitalization during the three months ended March 31, 2020. As such, the company determined a triggering event had occurred that required an interim impairment assessment for its ethanol production reporting unit and as such we evaluated our goodwill as of March 31, 2020. Significant assumptions inherent in the valuation methodologies for goodwill were employed and included, but were not limited to, prospective financial information, growth rates, discount rates, inflationary factors, and cost of capital. Based on our quantitative evaluation, we determined that the fair value of the ethanol production reporting unit did not exceed its carrying value. As a result, we concluded that the goodwill assigned to the ethanol production reporting unit was impaired and recorded a non-cash impairment charge of $24.1 million.

The company also identified triggering events due to decreases in the partnership's stock price and as a result, its market capitalization, and performed interim quantitative goodwill assessments as of March 31, 2020 and June 30, 2020. The company performed its annual goodwill assessment as of October 1, 2020, using a qualitative assessment. Each of the goodwill assessments resulted in no goodwill impairment.

For additional information, please refer to *Note 10 – Goodwill and Intangible Assets.*

Leases

On January 1, 2019, the company adopted the amended guidance in ASC 842, *Leases*, and all related amendments and applied it to all leases using the optional transition method which requires the amended guidance to be applied at the date of adoption. The standard does not require the guidance to be applied to the earliest comparative period presented in the financial statements. As such, comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods.

The company leases certain facilities, parcels of land, and equipment. These leases are accounted for as operating leases, with lease expense recognized on a straight-line basis over the lease term. The term of the lease may include options to extend or terminate the lease when it is reasonably certain that such options will be exercised. For leases with initial terms greater than 12 months, the company records operating lease right-of-use assets and corresponding operating lease liabilities. Leases with an initial term of 12 months or less are not recorded on the consolidated balance sheet. The company did not incur any material short-term lease expense for the years ended December 31, 2020 or 2019.

Operating lease right-of-use assets represent the right to control an underlying asset for the lease term and operating lease liabilities represent the obligation to make lease payments arising from the lease. These assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. As the company's leases do not provide an implicit rate, the incremental borrowing rate is used based on information available at commencement date to determine the present value of future payments.

The company elected to utilize a portfolio approach for lease classification, which allows for an entity to group together leases with similar characteristics provided that its application does not create a material difference when compared to accounting for the leases at a contract level. For railcar leases, the company elected to combine the railcars within each rider and account for each rider as an individual lease.

From a lessee perspective, the company combines both the lease and non-lease components and accounts for them as one lease. Certain of the company's railcar agreements provide for maintenance costs to be the responsibility of the company as incurred or charged by the lessor. This maintenance cost is a non-lease component that the company combines with the

monthly rental payment and accounts for the total cost as operating lease expense. In addition, the company has a land lease that contains a non-lease component for the handling and unloading services the landlord provides. The company combines the cost of services with the land lease cost and accounts for the total as operating lease expense.

The partnership segment records the majority of it operating lease revenue from its storage and throughput services, rail transportation services and certain terminal services agreements with Green Plains Trade. In addition, the partnership may sublease certain of its railcars to third parties on a short-term basis. These subleases are classified as operating leases, with the associated sublease revenue recognized on a straight-line basis over the lease term.

Please refer to *Note 18 – Commitments and Contingencies* to the consolidated financial statements for further details on operating lease expense and revenue.

Investments in Equity Method Investees

The company accounts for investments in which the company exercises significant influence using the equity method so long as the company (i) does not control the investee and (ii) is not the primary beneficiary of the entity. The company recognizes these investments as a separate line item in the consolidated balance sheets and its proportionate share of earnings on a separate line item in the consolidated statements of operations. The company's share of equity method investees other comprehensive income arising during the period is included in accumulated other comprehensive loss in the consolidated balance sheet.

The company recognizes losses in the value of equity method investments when there is evidence of an other-than-temporary decrease in value. Evidence of a loss might include, but would not necessarily be limited to, the inability to recover the carrying amount of the investment or the inability of the equity method investee to sustain an earnings capacity that justifies the carrying amount of the investment. The current fair value of an investment that is less than its carrying amount may indicate a loss in value of the investment. The company evaluates equity method investments for impairment if there is evidence an investment may be impaired. We use the nature of distribution approach to classify distributions from equity method investments on the statements of cash flows.

Discontinued Operations

In determining whether a disposal group should be presented as discontinued operations, the company makes a determination of whether such a group being disposed of comprises a component of the entity, or a group of components of the entity, that represents a strategic shift that has, or will have, a major effect on the company's operations and financial results. If these determinations are made affirmatively, the results of operations of the group being disposed of are aggregated for separate presentation apart from the continuing operations of the company for all periods presented in the consolidated financial statements. General corporate overhead is not allocated to discontinued operations.

Net income from discontinued operations, net of income taxes, relates to the operations of GPCC, which was previously a wholly owned subsidiary of Green Plains until the formation of the GPCC joint venture and partial sale during the third quarter of 2019. The assets and liabilities of GPCC have been reclassified as assets and liabilities of discontinued operations in the prior year. The company entered into a shared service agreement whereby they continued to provide certain administrative services to GPCC and received $400 thousand on a quarterly basis through December 31, 2020, at which time administrative services began to unwind as a result of the disposition of the GPCC joint venture on October 1, 2020. Associated services are not expected to be material in the future. See *Note 5 - Acquisitions, Dispositions and Discontinued Operations* for further details.

Financing Costs

Fees and costs related to securing debt are recorded as financing costs. Debt issuance costs are stated at cost and are amortized using the effective interest method for term loans and the straight-line basis over the life of the agreements for revolving credit arrangements and convertible notes. During periods of construction, interest is capitalized in construction-in-progress.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist of various expenses including employee salaries, incentives and benefits; office expenses; director compensation; professional fees for accounting, legal, consulting, and investor relations activities.

Stock-Based Compensation

The company recognizes compensation cost using a fair value based method whereby compensation cost is measured at the grant date based on the value of the award and is recognized over the service period, which is usually the vesting period. The company uses the Black-Scholes pricing model to calculate the fair value of options and warrants issued to both employees and non-employees. The company used the Monte Carlo valuation model to estimate the fair value of performance shares issued to employees. Stock issued for compensation is valued using the market price of the stock on the date of the related agreement.

Income Taxes

The provision for income taxes is computed using the asset and liability method, under which deferred tax assets and liabilities are recognized for the expected future tax consequences attributable to temporary differences between the financial reporting carrying amount of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in operating results in the period of enactment. Deferred tax assets are reduced by a valuation allowance when it is more likely than not that some portion or all of the deferred tax assets will not be realized.

The company recognizes uncertainties in income taxes within the financial statements under a process by which the likelihood of a tax position is gauged based upon the technical merits of the position, and then a subsequent measurement relates the maximum benefit and the degree of likelihood to determine the amount of benefit recognized in the financial statements.

Recent Accounting Pronouncements

Effective January 1, 2020, the company adopted the amended guidance in ASC 326, *Financial Instruments - Credit Losses*, which replaces the current incurred loss impairment method with a method that reflects expected credit losses on financial instruments. The new standard is effective for fiscal years and interim periods within those years, beginning after December 15, 2019, and allows for early adoption. The adoption of the new guidance did not have a material impact on the company's consolidated financial statements.

In December 2019, the FASB issued amended guidance in ASC 740, *Income Taxes - Simplifying the Accounting for Income Taxes,* which simplifies the accounting for income taxes by removing certain exceptions to the general principles in ASC 740. The amendments also improve consistent application of and simplify U.S. GAAP for other areas of ASC 740 by clarifying and amending existing guidance. The amendments are effective for fiscal years beginning after December 15, 2021, and interim periods within fiscal years beginning after December 15, 2022. Early adoption of the amendments is permitted. The company is evaluating the impact of this standard on its consolidated financial statements.

In March 2020, the FASB issued amended guidance in ASC 848, *Reference Rate Reform - Facilitation of the Effects of Reference Rate Reform on Financial Reporting,* which provides optional expedients and exceptions to U.S. GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burden related to the expected market transition from the LIBOR and other interbank offered rates to alternative reference rates. The expedients and exceptions provided by the amended guidance do not apply to contract modifications made and hedging relationships entered into or evaluated after December 31, 2022, except for hedging relationships existing as of December 31, 2022, that an entity has elected certain optional expedients for and that are retained through the end of the hedging relationship. The guidance is effective upon issuance and to be applied prospectively from any date beginning March 12, 2020 through December 31, 2022. The amended guidance is not expected to have a material impact on the company's consolidated financial statements.

In August 2020, the FASB issued amended guidance in *ASC 470-20*, *Debt - Debt with Conversion and Other Options* and *ASC 815-40, Derivatives and Hedging - Contracts in Entity's Own Equity - Accounting for Convertible Instruments and Contracts in an Equity's Own Equity*. The amended guidance simplifies the accounting for convertible debt instruments by reducing the number of accounting models and the number of embedded conversion features that could be recognized separately from the primary contract. The amended guidance also enhances transparency and improves disclosures for convertible instruments and earnings per share guidance. The amended guidance is effective for fiscal periods beginning after December 15, 2021, including interim periods within those fiscal periods. Early adoption is permitted, but no earlier than fiscal periods beginning after December 15, 2020. The amended guidance permits the use of either the modified retrospective or fully retrospective method of transition. The company intends on adopting the amended guidance on January 1, 2022 using the modified retrospective method of transition. The company is evaluating the impact of this standard on its consolidated

financial statements and anticipates it will result in an increase to long-term debt and a decrease in additional paid-in-capital as well as a reduction of non-cash interest expense related to the company's convertible notes.

3. GREEN PLAINS PARTNERS LP

The partnership is a fee-based master limited partnership formed by Green Plains to provide fuel storage and transportation services by owning, operating, developing and acquiring ethanol and fuel storage tanks, terminals, transportation assets and other related assets and businesses. The partnership's assets currently include (i) 31 ethanol storage facilities, located at or near the company's 12 operational ethanol production plants, which have the ability to efficiently and effectively store and load railcars and tanker trucks with all of the ethanol produced at the company's ethanol production plants, (ii) six fuel terminal facilities, located near major rail lines, which enable the partnership to receive, store and deliver fuels from and to markets that seek access to renewable fuels, and (iii) transportation assets, including a leased railcar fleet of approximately 2,480 railcars, which are contracted to transport ethanol from the company's ethanol production plants to refineries throughout the United States and international export terminals. The partnership is the company's primary downstream logistics provider to support its approximately 1.0 bgy ethanol marketing and distribution business since the partnership's assets are the principal method of storing and delivering the ethanol the company produces.

As of December 31, 2020, the company owns a 48.9% limited partner interest, consisting of 11,586,548 common units, and a 2.0% general partner interest in the partnership. The public owns the remaining 49.1% limited partner interest in the partnership. The partnership is consolidated in the company's financial statements.

A substantial portion of the partnership's revenues are derived from long-term, fee-based commercial agreements with Green Plains Trade, a subsidiary of the company. The partnership's agreements with Green Plains Trade include the following:

- 10-year storage and throughput agreement, expiring on June 30, 2028;
- 10-year rail transportation services agreement, expiring on June 30, 2025;
- 1-year trucking transportation agreement, expiring on May 31, 2021;
- Terminal services agreement for the Birmingham, Alabama unit train terminal, expiring December 31, 2022; and
- Various other terminal services agreements for other fuel terminal facilities, each with Green Plains Trade.

The partnership's storage and throughput agreement, and certain terminal services agreements, including the terminal services agreement for the Birmingham facility, are supported by minimum volume commitments. The partnership's rail transportation services agreement is supported by minimum take-or-pay capacity commitments. The company also has agreements which establish fees for general and administrative, and operational and maintenance services it provides. These transactions are eliminated when the company consolidates its financial results.

The company consolidates the financial results of the partnership and records a noncontrolling interest in the partnership held by public common unitholders. Noncontrolling interest on the consolidated statements of operations includes the portion of net income attributable to the economic interest held by the partnership's public common unitholders. Noncontrolling interest on the consolidated balance sheets includes the portion of net assets attributable to the partnership's public common unitholders.

4. REVENUE

Revenue Recognition

Revenue is recognized when obligations under the terms of a contract with a customer are satisfied. Generally this occurs with the transfer of control of products or services. Revenue is measured as the amount of consideration expected to be received in exchange for transferring goods or providing services. Sales, value add, and other taxes the company collects concurrent with revenue-producing activities are excluded from revenue.

Revenue by Source

The following tables disaggregate revenue by major source (in thousands):

	Twelve Months Ended December 31, 2020					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	$ -	$ -	$ -	$ -	$ -	$ -
Distillers grains	32,032	-	-	-	-	32,032
Corn oil	-	2,938	-	-	-	2,938
Service revenues	-	-	-	4,434	-	4,434
Other	4,306	6,423	-	-	-	10,729
Intersegment revenues	100	4,463	-	8,411	(12,974)	-
Total revenues from contracts with customers	36,438	13,824	-	12,845	(12,974)	50,133
Revenues from contracts accounted for as derivatives under ASC 815 [1]:						
Ethanol	1,150,018	287,261	-	-	-	1,437,279
Distillers grains	261,554	41,184	-	-	-	302,738
Corn oil	49,666	33,563	-	-	-	83,229
Grain	42	32,833	-	-	-	32,875
Other	4,863	12,201	-	-	-	17,064
Intersegment revenues	-	23,005	-	-	(23,005)	-
Total revenues from contracts accounted for as derivatives	1,466,143	430,047	-	-	(23,005)	1,873,185
Leasing revenues under ASC 842 [2]	-	-	-	70,500	(70,099)	401
Total Revenues	$ 1,502,581	$ 443,871	$ -	$ 83,345	$ (106,078)	$ 1,923,719

	Twelve Months Ended December 31, 2019					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	$ 620	$ -	$ -	$ -	$ -	$ 620
Distillers grains	70,729	-	-	-	-	70,729
Service revenues	-	-	-	6,422	-	6,422
Other	2,589	3,684	-	-	-	6,273
Intersegment revenues	100	-	-	7,126	(7,226)	-
Total revenues from contracts with customers	74,038	3,684	-	13,548	(7,226)	84,044
Revenues from contracts accounted for as derivatives under ASC 815 [1]:						
Ethanol	1,338,093	522,572	-	-	-	1,860,665
Distillers grains	228,849	42,445	-	-	-	271,294
Corn oil	50,290	28,034	1,451	-	-	79,775
Grain	175	63,233	-	-	-	63,408
Other	9,270	48,348	-	-	-	57,618
Intersegment revenues	-	27,184	-	-	(27,184)	-
Total revenues from contracts accounted for as derivatives	1,626,677	731,816	1,451	-	(27,184)	2,332,760
Leasing revenues under ASC 842 [2]	-	-	-	68,839	(68,405)	434
Total Revenues	$ 1,700,715	$ 735,500	$ 1,451	$ 82,387	$ (102,815)	$ 2,417,238

	Twelve Months Ended December 31, 2018					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	$ 3,803	$ -	$ -	$ -	$ -	$ 3,803
Distillers grains	206,905	-	-	-	-	206,905
Vinegar	-	-	108,011	-	-	108,011
Service revenues	-	-	-	5,180	-	5,180
Other	5,369	3,014	-	-	-	8,383
Intersegment revenues	186	24	-	9,030	(9,240)	-
Total revenues from contracts with customers	216,263	3,038	108,011	14,210	(9,240)	332,282
Revenues from contracts accounted for as derivatives under ASC 815 (1):						
Ethanol	1,618,319	418,956	-	-	-	2,037,275
Distillers grains	198,738	141,140	-	-	-	339,878
Corn oil	66,567	22,623	13,110	-	-	102,300
Grain	520	81,742	-	-	-	82,262
Other	20,254	68,380	-	-	-	88,634
Intersegment revenues	-	33,077	-	-	(33,077)	-
Total revenues from contracts accounted for as derivatives	1,904,398	765,918	13,110	-	(33,077)	2,650,349
Leasing revenues under ASC 840 (2)	-	-	-	86,538	(85,237)	1,301
Total Revenues	$ 2,120,661	$ 768,956	$ 121,121	$ 100,748	$ (127,554)	$ 2,983,932

(1) Revenues from contracts accounted for as derivatives represent physically settled derivative sales that are outside the scope of ASC 606, where the company recognizes revenue when control of the inventory is transferred within the meaning of ASC 606 as required by ASC 610-20, *Gains and Losses from Derecognition of Nonfinancial Assets*.
(2) Leasing revenues do not represent revenues recognized from contracts with customers under ASC 606, and are accounted for under ASC 842, *Leases* for 2020 and 2019 and ASC 840, *Leases* for 2018.

Major Customer

Revenues from Customer A represented 16% and 11% of total revenues for the year ended December 31, 2020 and 2019, respectively and are reported in the ethanol production segment. There were no third party customers that accounted for more than 10% of total revenues for the year ended December 31, 2018.

Payment Terms

The company has standard payment terms, which vary depending upon the nature of the services provided, with the majority falling within 10 to 30 days after transfer of control or completion of services. In instances where the timing of revenue recognition differs from the timing of invoicing, the company has determined that contracts generally do not include a significant financing component.

Contract Liabilities

The company records unearned revenue when consideration is received, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of service and lease agreements. Unearned revenue from service agreements, which represents a contract liability, is recorded for fees that have been charged to the customer prior to the completion of performance obligations. Unearned revenue is generally recognized in the subsequent quarter and is not material to the company. The company expects to recognize all of the unearned revenue associated with service agreements as of December 31, 2020, in the subsequent quarter when the inventory is withdrawn from the partnership's tank storage.

5. ACQUISITIONS, DISPOSITIONS AND DISCONTINUED OPERATIONS

ACQUISITIONS

Acquisition of a Majority Interest in Fluid Quip Technologies, LLC

On December 9, 2020, the company acquired a majority interest in Fluid Quip Technologies, LLC. The acquisition capitalizes on the core strengths of each company to develop and implement proven, value-added agriculture, food and industrial biotechnology systems and rapidly expand installation and production of Ultra-High Protein across Green Plains facilities, as well as offer these technologies to partnering biofuel facilities. The agreement contains certain earn-out provisions to be received from the company if certain future results are met, including but not limited to, results of

implementation and execution of technology. We will record the obligation related to the earn-out provision as compensation within selling, general and administrative expenses as the earn-out becomes probable.

The purchase price allocation is based on the preliminary results of an external valuation. The purchase price and purchase price allocation are preliminary until contractual post-closing working capital adjustments and valuations are finalized. The company paid $29.1 million for its interests in Fluid Quip Technologies, of which $2.4 million settled liabilities assumed in conjunction with the acquisition, and recognized $6.7 million of noncontrolling interest as part of the FQT acquisition.

The following is a summary of the preliminary purchase price of assets acquired and liabilities assumed (in thousands):

Amounts of Identifiable Assets Acquired and Liabilities Assumed		
Cash and restricted cash	$	8,911
Accounts receivable [(1)]		5,446
Inventory		3,037
Intangible assets		30,803
Other assets		2,059
Current liabilities [(1)]		(13,708)
Other long term liabilities		(743)
Total identifiable net assets	$	35,805

(1) Accounts receivable contain $3.4 million of pre-existing receivables owed by the company, and current liabilities contain $5.8 million in deferred revenues associated with services to be performed for the company. These net to $2.4 million in liabilities assumed that were effectively settled at the time of acquisition of FQT.

Acquisition of Cattle Feeding Operations – Bartlett Cattle Company, L.P.

On August 1, 2018, the company acquired two cattle-feeding operations from Bartlett Cattle Company, L.P. for $16.2 million, plus working capital of approximately $106.6 million primarily consisting of work-in-process inventory. The transaction included the feed yards located in Sublette, Kansas and Tulia, Texas, which added combined feedlot capacity of 97,000 head of cattle to the company's operations. The transaction was financed using cash on hand and proceeds from the Green Plains Cattle senior secured asset-based revolving credit facility. There were no material acquisition costs recorded for the acquisition.

The following is a summary of the assets acquired and liabilities assumed (in thousands):

Amounts of Identifiable Assets Acquired and Liabilities Assumed		
Accounts receivable	$	1,897
Inventory		104,809
Property and equipment, net		16,190
Current liabilities		(118)
Total identifiable net assets	$	122,778

The amounts above reflect the final purchase price allocation, which included working capital true-up payments by the company of $0.9 million made during 2018. After the disposition of GPCC, the assets and liabilities of the acquired feedlots were reclassified as discontinued operations. See *Disposition of Equity Interest in Green Plains Cattle Company LLC* and *Disposition of Green Plains Cattle Company LLC* described below.

DISPOSITIONS

Disposition of Hereford Ethanol Plant

On December 28, 2020, the company completed the sale of the ethanol plant located in Hereford, Texas, and certain related assets, to Hereford Ethanol Partners, L.P. for the sale price of $39.0 million, plus working capital. Correspondingly, the partnership's ethanol storage assets located adjacent to such plants were sold to the company for $10.0 million, and certain railcar operating leases were assigned to Hereford Ethanol Partners, L.P. The divested assets were reported within the company's ethanol production, agribusiness and energy and partnership segments. The company recorded a pretax loss on the sale of the ethanol plant of $22.4 million, of which a loss of $18.5 million was recorded within corporate activities and a loss

of $3.9 million was recorded within the ethanol production segment. Transaction fees related to the disposal were not material. The agreement contains certain earn-out provisions to be received from the buyers if certain provisions are met. The company will record any contingent amounts in the consolidated financial statements when the amount is reasonably determinable or the consideration is realized.

The asset and liabilities of the Hereford ethanol plant at closing on December 28, 2020 were as follows: (in thousands):

Amounts of Identifiable Assets Disposed and Liabilities Relinquished		
Inventory	$	8,140
Prepaid expenses and other		196
Property and equipment		54,279
Operating lease right-of-use-assets		5,096
Accrued and other liabilities		(870)
Operating lease current liabilities		(977)
Operating lease long-term liabilities		(4,201)
Long-term liabilities		(186)
Total identifiable net assets disposed	$	61,477

The amounts reflected above represent working capital estimates which are considered preliminary until contractual post-closing working capital adjustments are finalized.

Disposition of Equity Interest in Green Plains Cattle Company LLC

On October 1, 2020, pursuant to the Securities Purchase Agreement, the company sold its remaining 50% joint venture interest in GPCC to AGR, TGAM Agribusiness Fund LP and StepStone (the “Buyers”) for $80.5 million in cash, plus closing adjustments. The transaction resulted in a reduction in other assets of $69.7 million as a result of the removal of the equity method investment in GPCC, and a reduction in accumulated other comprehensive income (loss) of $10.7 million as a result of the removal of the company’s share of equity method investees accumulated other comprehensive loss. Transaction fees related to the disposal were not material. There was no material gain or loss recorded as part of this transaction. The Securities Purchase Agreement contains certain earn-out provisions to be paid to or received from the Buyers if certain EBITDA thresholds are met. The company will record any contingent amounts associated with the earn-out provision in the consolidated financial statements when the amount is probable and reasonably determinable or the consideration is realized. See *Note 21 – Equity Method Investments* for further details.

Disposition of Fleischmann’s Vinegar

On November 27, 2018, the company and Green Plains II LLC, an indirect wholly-owned subsidiary of the company, completed the sale of Fleischmann’s Vinegar Company, Inc. to Kerry Holding Co. (“Kerry”). The company received as net consideration from Kerry $354.0 million in cash and restricted cash, excluding net working capital adjustments. The divested assets were reported within the company’s food and ingredients segment. The company recorded a pretax gain on the sale of Fleischmann’s Vinegar of $58.2 million, including offsetting related transaction costs of $7.4 million within corporate activities.

The assets and liabilities of Fleischmann's Vinegar at closing on November 27, 2018 were as follows (in thousands):

Amounts of Identifiable Assets Disposed and Liabilities Relinquished		
Cash	$	2,107
Accounts receivable, net		16,142
Inventory		15,167
Prepaid expenses and other		853
Property and equipment		64,552
Other assets		79,389
Current liabilities		(8,837)
Deferred tax liabilities		(26,617)
Total identifiable net assets		142,756
Goodwill		142,002
Net assets disposed	$	284,758

The amounts above reflect the final purchase price allocation, including a working capital payment made to and received from Kerry of $0.3 million and $0.3 million during the first and third quarters of 2019, respectively.

Disposition of Bluffton, Lakota and Riga Ethanol Plants

On November 15, 2018, the company completed the sale of three ethanol plants located in Bluffton, Indiana, Lakota, Iowa, and Riga, Michigan, and certain related assets from subsidiaries, to Valero Renewable Fuels Company, LLC ("Valero") for the sale price of $323.2 million, including net working capital and other adjustments. Correspondingly, the partnership's storage assets located adjacent to such plants were sold to Green Plains Inc. for $120.9 million. The company received as consideration from Valero approximately $323.2 million, while the partnership received as consideration from the company 8.7 million partnership units and a portion of the general partner interest equating to 0.2 million equivalent limited partner units to maintain the general partner's 2% interest. In addition, the partnership also received additional consideration of approximately $2.7 million from Valero for the assignment of certain railcar operating leases. The divested assets were reported within the company's ethanol production, agribusiness and energy services and partnership segments. The company recorded a pretax gain on the sale of the three ethanol plants of $92.2 million, of which $89.5 million was recorded within corporate activities and $2.7 million was recorded within the partnership segment, including offsetting transaction costs of $4.2 million, of which $3.7 million were recorded within corporate activities and $0.5 million were recorded within the partnership segment.

The assets and liabilities of the Bluffton, Lakota and Riga ethanol plants at closing on November 15, 2018 were as follows (in thousands):

Amounts of Identifiable Assets Disposed and Liabilities Relinquished		
Inventory	$	36,812
Prepaid expenses and other		189
Property and equipment		184,970
Other assets		1,717
Current liabilities		(746)
Other liabilities		(4,706)
Total identifiable net assets		218,236
Goodwill		6,188
Net assets disposed	$	224,424

The amounts above reflect the final working capital true-up payments by Valero of $3.4 million received during the first quarter of 2019.

The company determined that the dispositions noted above did not meet the criteria for discontinued operations presentation as the disposition of these businesses did not represent a strategic shift that will have a major effect on its operations and financial results.

Disposition of Green Plains Cattle Company LLC

On September 1, 2019, the company, TGAM and StepStone formed a joint venture and entered into the LLC Agreement. GPCC was previously a wholly owned subsidiary of Green Plains. Green Plains also entered into a Securities Purchase Agreement with TGAM and StepStone, whereby TGAM and StepStone purchased an aggregate of 50% of the membership interests of GPCC from Green Plains for approximately $76.9 million in cash. There was no gain or loss recorded as part of this transaction. The LLC Agreement contains certain earn-out or bonus provisions to be paid by or received from GPCC if certain EBITDA thresholds are met. Pursuant to the bonus provision, on August 31, 2020, Green Plains earned $2.0 million which has been recorded within loss (gain) on sale of assets, net on the consolidated statements of operations for the year ended December 31, 2020.

The assets and liabilities of the GPCC at closing on September 1, 2019 were as follows (in thousands):

Amounts of Identifiable Assets Disposed and Liabilities Relinquished		
Cash	$	2
Accounts receivable, net		17,920
Inventory		387,534
Derivative financial instruments		48,189
Property and equipment		71,678
Other assets		2,291
Current liabilities		(49,297)
Short-term notes payable and other borrowings		(38)
Current maturities of long-term debt		(324,028)
Long-term debt		(80)
Other liabilities		(403)
Total identifiable net assets disposed	$	153,768

DISCONTINUED OPERATIONS

After closing on September 1, 2019, GPCC is no longer consolidated in the company’s consolidated financial statements and the GPCC investment was accounted for using the equity method of accounting. Additionally, the company concluded that the disposition of GPCC met the requirements under ASC 205-20. As such, GPCC results prior to its disposition are classified as discontinued operations for the years ended December 31, 2019 and 2018. Financial results of GPCC were previously recorded within the food and ingredients segment.

Summarized Results of Discontinued Operations

The following table presents the results of our discontinued operations for the periods presented. GPCC was disposed of on September 1, 2019, and as such, operational results through August 31, 2019 are included in the fiscal year 2019 amounts presented below (in thousands).

	Year Ended December 31,	
	2019 (1)	**2018** (1)
Product revenues	$ 638,122	$ 884,072
Costs and expenses		
Cost of goods sold (excluding depreciation and amortization expenses reflected below)	614,671	845,160
Selling, general and administrative expenses	5,931	7,775
Depreciation and amortization expenses	4,198	5,361
Total costs and expenses	624,800	858,296
Operating income	13,322	25,776
Other income (expense)		
Interest income	182	147
Interest expense	(12,417)	(13,576)
Other, net	-	2,613
Total other expense	(12,235)	(10,816)
Income before income taxes	1,087	14,960
Income tax expense	(258)	(3,421)
Net income	$ 829	$ 11,539

(1) Product revenues, costs of goods sold and selling, general and administrative expenses include certain revenue and expense items which were previously considered intercompany transactions prior to the disposition of GPCC and therefore eliminated upon consolidation. These revenue and costs of goods sold transactions total $14.5 million and $24.6 million for the years ended December 31, 2019 and 2018, respectively.

6. FAIR VALUE DISCLOSURES

The following methods, assumptions and valuation techniques were used in estimating the fair value of the company's financial instruments:

Level 1 – unadjusted quoted prices in active markets for identical assets or liabilities the company can access at the measurement date.

Level 2 – directly or indirectly observable inputs such as quoted prices for similar assets or liabilities in active markets other than quoted prices included within Level 1, quoted prices for identical or similar assets in markets that are not active, and other inputs that are observable or can be substantially corroborated by observable market data through correlation or other means. Grain inventories held for sale in the agribusiness and energy services segment are valued at nearby futures values, plus or minus nearby basis values, which represent differences in local markets including transportation or commodity quality or grade differences.

Level 3 – unobservable inputs that are supported by little or no market activity and comprise a significant component of the fair value of the assets or liabilities. The company currently does not have any recurring Level 3 financial instruments.

Derivative contracts include exchange-traded commodity futures and options contracts and forward commodity purchase and sale contracts. Exchange-traded futures and options contracts are valued based on unadjusted quoted prices in active markets and are classified in Level 1. The majority of the company's exchange-traded futures and options contracts are cash-settled on a daily basis.

There have been no changes in valuation techniques and inputs used in measuring fair value. The company's assets and liabilities by level are as follows (in thousands):

	Fair Value Measurements at December 31, 2020		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Assets:			
Cash and cash equivalents	$ 233,860	$ -	$ 233,860
Restricted cash	40,950	-	40,950
Inventories carried at market	-	77,900	77,900
Unrealized gains on derivatives	-	21,956	21,956
Other assets	112	29	141
Total assets measured at fair value	$ 274,922	$ 99,885	$ 374,807
Liabilities:			
Accounts payable [(1)]	$ -	$ 19,355	$ 19,355
Unrealized losses on derivatives	-	10,997	10,997
Total liabilities measured at fair value	$ -	$ 30,352	$ 30,352

	Fair Value Measurements at December 31, 2019		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Total
Assets:			
Cash and cash equivalents	$ 245,977	$ -	$ 245,977
Restricted cash	23,919	-	23,919
Inventories carried at market	-	73,318	73,318
Unrealized gains on derivatives	-	14,515	14,515
Other assets	113	-	113
Total assets measured at fair value	$ 270,009	$ 87,833	$ 357,842
Liabilities:			
Accounts payable [(1)]	$ -	$ 37,294	$ 37,294
Unrealized losses on derivatives	-	7,771	7,771
Total liabilities measured at fair value	$ -	$ 45,065	$ 45,065

(1) Accounts payable is generally stated at historical amounts with the exception of $19.4.million and $37.3 million at December 31, 2020 and 2019, respectively, related to certain delivered inventory for which the payable fluctuates based on changes in commodity prices. These payables are hybrid financial instruments for which the company has elected the fair value option.

The fair value of the company's debt was approximately $535.9 million compared with a book value of $526.2 million at December 31, 2020. The fair value of the company's debt approximated book value, which was $564.4 million at December 31, 2019. The company estimated the fair value of its outstanding debt using Level 2 inputs. The company believes the fair values of its accounts receivable approximated book value, which was $55.6 million and $107.2 million, respectively, at December 31, 2020 and 2019.

Although the company currently does not have any recurring Level 3 financial measurements, the fair values of tangible assets and goodwill acquired and the equity component of convertible debt represent Level 3 measurements which were derived using a combination of the income approach, market approach and cost approach for the specific assets or liabilities being valued.

7. SEGMENT INFORMATION

The company reports the financial and operating performance for the following four operating segments: (1) ethanol production, which includes the production of ethanol, including industrial-grade alcohol, distillers grains, Ultra-High Protein and corn oil, (2) agribusiness and energy services, which includes grain handling and storage, commodity marketing and merchant trading for company-produced and third-party ethanol, distillers grains, corn oil, natural gas and other commodities, (3) food and ingredients, which includes food-grade corn oil and included vinegar production until the sale of Fleischmann's Vinegar during the fourth quarter of 2018 and (4) partnership, which includes fuel storage and transportation services.

Corporate activities include selling, general and administrative expenses, consisting primarily of compensation, professional fees and overhead costs not directly related to a specific operating segment.

During the normal course of business, the operating segments conduct business with each other. For example, the agribusiness and energy services segment procures grain and natural gas and sells products, including ethanol, distillers grains and corn oil for the ethanol production segment. The partnership segment provides fuel storage and transportation services for the ethanol production segment. These intersegment activities are treated like third-party transactions with origination, marketing and storage fees charged at estimated market values. Consequently, these transactions affect segment performance; however, they do not impact the company's consolidated results since the revenues and corresponding costs are eliminated.

The following tables set forth certain financial data for the company's operating segments, excluding amounts related to discontinued operations (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Revenues:			
Ethanol production:			
Revenues from external customers	$ 1,502,481	$ 1,700,615	$ 2,120,475
Intersegment revenues	100	100	186
Total segment revenues	1,502,581	1,700,715	2,120,661
Agribusiness and energy services:			
Revenues from external customers	416,403	708,316	735,855
Intersegment revenues	27,468	27,184	33,101
Total segment revenues	443,871	735,500	768,956
Food and ingredients:			
Revenues from external customers	-	1,451	121,121
Intersegment revenues	-	-	-
Total segment revenues	-	1,451	121,121
Partnership:			
Revenues from external customers	4,835	6,856	6,481
Intersegment revenues	78,510	75,531	94,267
Total segment revenues	83,345	82,387	100,748
Revenues including intersegment activity	2,029,797	2,520,053	3,111,486
Intersegment eliminations	(106,078)	(102,815)	(127,554)
Revenues as reported	$ 1,923,719	$ 2,417,238	$ 2,983,932

Refer to *Note 4 – Revenue*, for further disaggregation of revenue by operating segment.

	Year Ended December 31,		
	2020	2019	2018
Cost of goods sold:			
Ethanol production	$ 1,507,335	$ 1,791,099	$ 2,118,787
Agribusiness and energy services	409,407	696,226	717,772
Food and ingredients	-	1,526	94,679
Partnership	-	-	-
Intersegment eliminations	(104,579)	(103,904)	(124,270)
	$ 1,812,163	$ 2,384,947	$ 2,806,968

	Year Ended December 31,		
	2020	2019	2018
Operating income (loss):			
Ethanol production [1]	$ (129,618)	$ (178,575)	$ (111,823)
Agribusiness and energy services	15,773	22,777	29,076
Food and ingredients	-	(76)	14,354
Partnership	50,437	50,635	64,770
Intersegment eliminations	(1,400)	1,188	(3,110)
Corporate activities [2]	(57,888)	(38,519)	96,687
	$ (122,696)	$ (142,570)	$ 89,954

(1) Operating loss for the ethanol production segment for fiscal year 2020 includes a goodwill impairment charge of $24.1 million and $3.9 million pretax loss on sale of assets from the sale of the Hereford, Texas ethanol plant.
(2) Corporate activities for fiscal year 2020 include a goodwill impairment charge of $24.1 million, $18.5 million pretax loss on sale of assets from the sale of the Hereford, Texas ethanol plant and a $1.5 million net gain from sale of GPCC. Fiscal year 2018 includes a $150.4 million gain on the sale of the Bluffton, Indiana, Lakota, Iowa, and Riga, Michigan ethanol plants, as well as Fleischmann's Vinegar during the fourth quarter.

	Year Ended December 31,		
	2020	2019	2018
Depreciation and amortization:			
Ethanol production	$ 67,956	$ 63,073	$ 80,227
Agribusiness and energy services	2,512	2,222	2,470
Food and ingredients	-	-	7,553
Partnership	3,806	3,441	4,442
Corporate activities	3,970	3,391	3,566
	$ 78,244	$ 72,127	$ 98,258

	Year Ended December 31,		
	2020	2019	2018
Capital expenditures:			
Ethanol production	$ 109,970	$ 72,374	$ 27,322
Agribusiness and energy services	1,195	2,251	277
Food and ingredients	-	-	9,025
Partnership	162	305	1,268
Corporate activities	472	1,542	451
	$ 111,799	$ 76,472	$ 38,343

The following table sets forth total assets by operating segment (in thousands):

	Year Ended December 31,	
	2020	2019
Total assets [1]:		
Ethanol production	$ 852,959	$ 884,293
Agribusiness and energy services	426,724	410,400
Partnership	91,205	90,011
Corporate assets	228,074	324,280
Intersegment eliminations	(20,045)	(10,766)
	$ 1,578,917	$ 1,698,218

(1) Asset balances by segment exclude intercompany payable and receivable balances.

8. INVENTORIES

Inventories are carried at the lower of cost or net realizable value, except grain held for sale and fair-value hedged inventories. Commodities held for sale are reported at market value. As of December 31, 2020, there was no lower cost of market inventory adjustment recorded. The company recorded a $6.6 million lower of cost or market inventory adjustment reflected in cost of goods sold within the ethanol production segment as of December 31, 2019.

The components of inventories are as follows (in thousands):

	December 31,	
	2020	2019
Finished goods	$ 89,223	$ 85,975
Commodities held for sale	40,147	42,836
Raw materials	90,800	77,900
Work-in-process	13,201	13,523
Supplies and parts	36,120	32,758
	$ 269,491	$ 252,992

9. PROPERTY AND EQUIPMENT

The components of property and equipment are as follows (in thousands):

	December 31,	
	2020	2019
Plant equipment	$ 940,363	$ 911,097
Buildings and improvements	170,813	168,309
Land and improvements	86,909	92,321
Railroad track and equipment	34,637	34,404
Construction-in-progress	48,378	60,262
Computer hardware and software	20,477	19,368
Office furniture and equipment	3,797	3,716
Leasehold improvements and other	26,510	24,471
Total property and equipment	1,331,884	1,313,948
Less: accumulated depreciation and amortization	(530,194)	(486,677)
Property and equipment, net	$ 801,690	$ 827,271

10. GOODWILL AND INTANGIBLE ASSETS

Goodwill

The company had two reporting units, to which goodwill was assigned. We are required to perform impairment tests related to our goodwill annually, which we perform as of October 1, or sooner if an indicator of impairment occurs. Near term industry outlook due to the significant decrease in crude oil prices, lower gasoline demand, general uncertainty due to the COVID-19 outbreak and the subsequent decline in our stock price caused a decline in the company's market capitalization during the three months ended March 31, 2020. As such, the company determined a triggering event had occurred that required an interim impairment assessment for its ethanol production reporting unit. Due to the impairment indicators noted as a result of these triggering events, we evaluated our goodwill as of March 31, 2020. Significant assumptions inherent in the valuation methodologies for goodwill were employed and included, but were not limited to, prospective financial information, growth rates, discount rates, inflationary factors, and cost of capital. Based on our quantitative evaluation, we determined that the fair value of the ethanol production reporting unit did not exceed its carrying value. As a result, we concluded that the goodwill assigned to the ethanol production reporting unit was impaired and recorded a non-cash impairment charge of $24.1 million.

During the first half of 2020, a decline in the partnership's stock price resulted in a decrease in the partnership's market capitalization. As such, the company determined a triggering event had occurred that required an interim impairment assessment as of March 31, 2020 and June 30, 2020. Significant assumptions inherent in the valuation methodologies for goodwill impairment testing were employed and include market capitalization, prospective financial information, growth rates, discount rates, inflationary factors, and cost of capital. Based on the partnership's quantitative evaluation as of March 31, 2020 and June 30, 2020, it was determined that the fair value of the partnership reporting unit substantially exceeded its carrying value, and the partnership concluded that the goodwill was not impaired. During the three months ended September 30, 2020, the company did not identify any triggering events, and as such, no impairment assessment was deemed necessary.

The company performed the annual goodwill assessment as of October 1, 2020, and given the quantitative work performed during previous quarters as described above, the partnership used a qualitative assessment, which resulted in no goodwill impairment.

Changes in the carrying amount of goodwill attributable to each business segment during the years ended December 31, 2020 and 2019 were as follows (in thousands):

	Ethanol Production	Partnership	Total
Balance, December 31, 2018	$ 24,091	$ 10,598	$ 34,689
Balance, December 31, 2019 [1]	$ 24,091	$ 10,598	$ 34,689
Impairment charge	(24,091)	-	(24,091)
Balance, December 31, 2020 [1]	$ -	$ 10,598	$ 10,598

(1) The company records goodwill within other assets on the consolidated balance sheets.

Intangible Assets

The company recognized certain customer relationships, intellectual property and trade names in connection with the FQT acquisition during the fourth quarter 2020. As of December 31, 2020, the company's intangible asset balance related to FQT was $30.6 million, which primarily consisted of $18.8 million of customer relationship and backlog assets, $10.4 million of intellectual property and $1.4 million of trade name assets, net of $0.2 million of accumulated amortization, and has a remaining 12-year weighted-average amortization period. The company recognized $0.2 million of amortization expense associated with amortization of these intangible assets during fiscal year 2020, and expects estimated amortization expense of $5.9 million, $5.1 million, $3.1 million, $2.7 million and $2.4 million, respectively for the years ended December 31, 2021, 2022, 2023, 2024 and 2025, as well as $11.4 million thereafter. The company's intangible assets are recorded within other assets on the consolidated balance sheets.

As of November 27, 2018, the company's customer relationship intangible asset recognized in connection with the Fleischmann's Vinegar acquisition of $68.9 million, net of $11.1 million of amortization, was disposed of in connection with the Fleischmann's Vinegar sale. As of November 27, 2018, the company's indefinite-lived trade name intangible asset of $10.5 million was disposed of as part of the Fleischmann's Vinegar sale. Prior to its disposition, the company recognized $4.4 million of amortization expense associated with amortizing the customer relationship intangible asset during the year ended December 31, 2018.

11. DERIVATIVE FINANCIAL INSTRUMENTS

At December 31, 2020, the company's consolidated balance sheet reflected unrealized losses of $2.2 million, net of tax, in accumulated other comprehensive loss. The company expects these items will be reclassified as operating income over the next 12 months as a result of hedged transactions that are forecasted to occur. The amount realized in operating income will differ as commodity prices change.

Fair Values of Derivative Instruments

The fair values of the company's derivative financial instruments and the line items on the consolidated balance sheets where they are reported are as follows (in thousands):

	Asset Derivatives' Fair Value at December 31,		Liability Derivatives' Fair Value at December 31,	
	2020	2019	2020	2019
Derivative financial instruments	$ 21,956 [1]	$ 14,515 [2]	$ 10,997 [3]	$ 7,771
Other assets	29	-	-	-
Total	$ 21,985	$ 14,515	$ 10,997	$ 7,771

(1) At December 31, 2020, derivative financial instruments, as reflected on the balance sheet, includes net unrealized gains on exchange traded futures and options contracts of $3.3 million, which include $2.8 million of net unrealized gains on derivative financial instruments designated as cash flow hedging instruments.
(2) At December 31, 2019, derivative financial instruments, as reflected on the balance sheet, includes net unrealized gains on exchange traded futures and options contracts of $3.4 million, which include $0.1 million of net unrealized gains on derivative financial instruments designated as cash flow hedging instruments.
(3) At December 31, 2020, derivative financial instruments, as reflected on the balance sheet, includes net unrealized losses on exchange traded futures and options contracts of $9.3 million, none of which were designated as cash flow hedging instruments.

Refer to *Note 6 - Fair Value Disclosures*, which contains fair value information related to derivative financial instruments.

Effect of Derivative Instruments on Consolidated Balance Sheets, Consolidated Statements of Operations and Consolidated Statements of Comprehensive Income

The gains or losses recognized in income and other comprehensive income related to the company's derivative financial instruments and the line items on the consolidated financial statements where they are reported are as follows (in thousands):

Location of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income into Income	Amount of Gain (Loss) Reclassified from Accumulated Other Comprehensive Income into Income — Year Ended December 31, 2020	2019	2018
Revenues	$ 5,538	$ -	$ 3,648
Cost of goods sold	(2,115)	-	1,258
Net income (loss) from discontinued operations, net of income taxes	-	48,797	(14,462)
Net gain (loss) recognized in loss before tax	$ 3,423	$ 48,797	$ (9,556)

Gain (Loss) Recognized in Other Comprehensive Income on Derivatives	Amount of Gain (Loss) Recognized in Other Comprehensive Income on Derivatives — Year Ended December 31, 2020	2019	2018
Commodity Contracts	$ (1,025)	$ 70,404	$ (9,642)

Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in Income on Derivatives	Amount of Gain (Loss) Recognized in Income on Derivatives — Year Ended December 31, 2020	2019	2018
Commodity contracts	Revenues	$ (10,813)	$ (10,202)	$ 11,565
Commodity contracts	Costs of goods sold	32,914	(2,442)	21,101
Commodity contracts	Net income (loss) from discontinued operations, net of income taxes	-	(2,470)	(3,607)
		$ 22,101	$ (15,114)	$ 29,059

The following amounts were recorded on the consolidated balance sheets related to cumulative basis adjustments for the fair value hedged items (in thousands):

	December 31, 2020		December 31, 2019	
Line Item in the Consolidated Balance Sheet in Which the Hedged Item is Included	Carrying Amount of the Hedged Assets	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets	Carrying Amount of the Hedged Assets	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets
Inventories	$ 53,963	$ 9,041	$ 55,021	$ (2,808)

Effect of Cash Flow and Fair Value Hedge Accounting on the Statements of Operations

	Location and Amount of Gain (Loss) Recognized in Income on Cash Flow and Fair Value Hedging Relationships for the Year Ended December 31, 2020		
	Revenue	**Cost of Goods Sold**	**Net Income from Discontinued Operations, Net of Income Taxes**
Gain (loss) on cash flow hedging relationships:			
Commodity contracts:			
Amount of gain (loss) reclassified from accumulated other comprehensive income into income	$ 5,538	$ (2,115)	$ -
Gain (loss) on fair value hedging relationships:			
Commodity contracts:			
Hedged item	-	5,098	-
Derivatives designated as hedging instruments	-	(3,752)	-
Total amounts of income and expense line items presented in the consolidated statement of operations in which the effects of cash flow or fair value hedges are recorded	$ 5,538	$ (769)	$ -

	Location and Amount of Gain Recognized in Income on Cash Flow and Fair Value Hedging Relationships for the Year Ended December 31, 2019		
	Revenue	**Cost of Goods Sold**	**Net Income from Discontinued Operations, Net of Income Taxes**
Gain on cash flow hedging relationships:			
Commodity contracts:			
Amount of gain reclassified from accumulated other comprehensive income into income	$ -	$ -	$ 48,797
Gain (loss) on fair value hedging relationships:			
Commodity contracts:			
Hedged item	-	(844)	-
Derivatives designated as hedging instruments	-	4,254	-
Total amounts of income and expense line items presented in the consolidated statement of operations in which the effects of cash flow or fair value hedges are recorded	$ -	$ 3,410	$ 48,797

	Location and Amount of Gain (Loss) Recognized in Income on Cash Flow and Fair Value Hedging Relationships for the Year Ended December 31, 2018		
	Revenue	Cost of Goods Sold	Net Income from Discontinued Operations, Net of Income Taxes
Gain (loss) on cash flow hedging relationships:			
Commodity contracts:			
Amount of gain (loss) reclassified from accumulated other comprehensive income into income	$ 3,648	$ 1,258	$ (14,462)
Gain (loss) on fair value hedging relationships:			
Commodity contracts:			
Hedged item	-	13,681	-
Derivatives designated as hedging instruments	-	(12,304)	-
Total amounts of income and expense line items presented in the consolidated statement of operations in which the effects of cash flow or fair value hedges are recorded	$ 3,648	$ 2,635	$ (14,462)

There were no gains or losses from discontinuing cash flow or fair value hedge treatment during the years ended December 31, 2020, 2019 and 2018.

The open commodity derivative positions as of December 31, 2020, are as follows (in thousands):

December 31, 2020					
	Exchange Traded	Non-Exchange Traded			
Derivative Instruments	Net Long & (Short) [(1)]	Long [(2)]	(Short) [(2)]	Unit of Measure	Commodity
Futures	(27,245)			Bushels	Corn and Soybeans
Futures	45,520 [(3)]			Bushels	Corn
Futures	(7,430) [(4)]			Bushels	Corn
Futures	(161,070)			Gallons	Ethanol
Futures	(134,946) [(3)]			Gallons	Ethanol
Futures	(14,200)			mmBTU	Natural Gas
Futures	(6,888) [(4)]			mmBTU	Natural Gas
Futures	69			Tons	Soybean Meal
Options	130			Tons	Soybean Meal
Options	73,973			Pounds	Soybean Oil
Options	6,168			Bushels	Corn
Options	105			Gallons	Ethanol
Options	238			mmBTU	Natural Gas
Forwards		41,357	(302)	Bushels	Corn and Soybeans
Forwards		-	(147,432)	Gallons	Ethanol
Forwards		156	(343)	Tons	Distillers Grains
Forwards		528	(47,057)	Pounds	Corn Oil
Forwards		11,242	(931)	mmBTU	Natural Gas

(1) Exchange traded futures and options are presented on a net long and (short) position basis. Options are presented on a delta-adjusted basis.
(2) Non-exchange traded forwards are presented on a gross long and (short) position basis including both fixed-price and basis contracts.
(3) Futures used for cash flow hedges.
(4) Futures used for fair value hedges.

Energy trading contracts that do not involve physical delivery are presented net in revenues on the consolidated statements of operations. Included in revenues are net gains of $3.0 million, $12.3 million, and $23.1 million for the years ended December 31, 2020, 2019, and 2018 respectively, on energy trading contracts.

12. DEBT

The components of long-term debt are as follows (in thousands):

	December 31, 2020	December 31, 2019
Corporate:		
$170.0 million convertible notes due 2022 (1)	$ 156,441	$ 149,256
$115.0 million convertible notes due 2024 (2)	89,125	83,497
Green Plains Partners:		
$135.0 million credit facility (3)	100,000	132,100
Green Plains Wood River and Green Plains Shenandoah:		
$75.0 million delayed draw loan agreement (4)	30,000	-
Other	15,936	16,512
Total book value of long-term debt	391,502	381,365
Unamortized debt issuance costs	(6,151)	(4,820)
Less: current maturities of long-term debt	(98,052)	(132,555)
Total long-term debt	$ 287,299	$ 243,990

(1) Includes $1.3 million and $2.0 million of unamortized debt issuance costs as of December 31, 2020 and 2019, respectively.
(2) Includes $2.2 million and $2.8 million of unamortized debt issuance costs as of December 31, 2020 and 2019, respectively.
(3) The Green Plains Partners credit facility was amended on June 4, 2020 and includes $2.3 million of unamortized debt issuance costs as of December 31, 2020. Additionally, the credit facility is included in current maturities of long-term debt on the consolidated balance sheet as of December 31, 2020 as its maturity date is December 31, 2021. See below for further discussion.
(4) On September 3, 2020, Green Plains Wood River and Green Plains Shenandoah, wholly-owned subsidiaries of the company, entered into a $75.0 million delayed draw loan agreement. The delayed draw loan includes $0.3 million of unamortized debt issuance costs as of December 31, 2020.

Scheduled long-term debt repayments, including full accretion of the $170.0 million convertible notes due 2022 and of the $115.0 million convertible notes due 2024 at maturity but excluding the effects of any debt discounts and debt issuance costs, are as follows (in thousands):

Year Ending December 31,	Amount
2021	$ 100,313
2022	171,831
2023	1,815
2024	116,819
2025	1,804
Thereafter	38,354
Total	$ 430,936

The components of short-term notes payable and other borrowings are as follows (in thousands):

	December 31, 2020	December 31, 2019
Green Plains Trade:		
$300.0 million revolver	$ 79,251	$ 138,204
Green Plains Grain:		
$100.0 million revolver	38,700	40,000
$50.0 million inventory financing	-	-
Green Plains Commodity Management:		
$30.0 million hedge line	21,682	9,608
Other	1,175	-
Total short-term notes payable and other borrowings	$ 140,808	$ 187,812

Corporate Activities

During 2019, the company issued an aggregate $115.0 million of 4.00% convertible senior notes due in 2024, or the 4.00% notes. The 4.00% notes are senior, unsecured obligations of the company, with interest payable on January 1 and July 1 of each year, beginning January 1, 2020, at a rate of 4.00% per annum. The 4.00% notes will mature on July 1, 2024, unless earlier converted, redeemed or repurchased. The 4.00% notes will be convertible, at the option of the holders, into consideration consisting of, at the company's election, cash, shares of the company's common stock, or a combination of

cash and shares of the company's common stock until the close of business on the scheduled trading day immediately preceding the maturity date. However, before January 1, 2024, the 4.00% notes will not be convertible unless certain conditions are satisfied. The initial conversion rate is 64.1540 shares of common stock per $1,000 of principal, which is equal to a conversion price of approximately $15.59 per share. The conversion rate will be subject to adjustment upon the occurrence of certain events. In addition, the company may be obligated to increase the conversion rate for any conversion that occurs in connection with certain corporate events, including the company's calling the 4.00% notes for redemption.

On and after July 1, 2022, and prior to the maturity date, the company may redeem all, but not less than all, of the 4.00% notes for cash if the sale price of the company's common stock equals or exceeds 140% of the applicable conversion price for a specified time period ending on the trading day immediately prior to the date the company delivers notice of the redemption. The redemption price will equal 100% of the principal amount of the 4.00% notes to be redeemed, plus any accrued and unpaid interest to, but excluding, the redemption date. In addition, upon the occurrence of a fundamental change, holders of the 4.00% notes will have the right, at their option, to require the company to repurchase the 4.00% notes in cash at a price equal to 100% of the principal amount of the 4.00% notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

In August 2016, the company issued $170.0 million of 4.125% convertible senior notes due in 2022, or the 4.125% notes. The 4.125% notes are senior, unsecured obligations of the company, with interest payable on March 1 and September 1 of each year. The company may settle the 4.125% notes in cash, common stock or a combination of cash and common stock. Prior to March 1, 2022, the 4.125% notes are not convertible unless certain conditions are satisfied. The initial conversion rate is 35.7143 shares of common stock per $1,000 of principal, which is equal to a conversion price of approximately $28.00 per share. The conversion rate is subject to adjustment upon the occurrence of certain events, including upon redemption of the 4.125% notes.

The company may redeem all, but not less than all, of the 4.125% notes at any time on or after September 1, 2020, if the company's common stock equals or exceeds 140% of the applicable conversion price for a specified time period ending on the trading day immediately prior to the date the company delivers notice of the redemption. The redemption price will equal 100% of the principal plus any accrued and unpaid interest. Holders of the 4.125% notes have the option to require the company to repurchase the 4.125% notes in cash at a price equal to 100% of the principal plus accrued and unpaid interest when there is a fundamental change, such as change in control. If an event of default occurs, it could result in the 4.125% notes being declared due and payable.

Agribusiness and Energy Services Segment

Green Plains Trade has a $300.0 million senior secured asset-based revolving credit facility to finance working capital for marketing and distribution activities based on eligible collateral equal to the sum of percentages of eligible receivables and inventories, less miscellaneous adjustments. The credit facility matures on July 28, 2022 and consists of a $285 million credit facility and a $15 million first-in-last-out (FILO) credit facility, and includes an accordion feature that enables the credit facility to be increased by up to $70.0 million with agent approval. Advances are subject to variable interest rates equal to daily LIBOR plus 2.25% on the credit facility and daily LIBOR plus 3.25% on the FILO credit facility. The total unused portion of the revolving credit facility is also subject to a commitment fee of 0.375% per annum.

The terms impose affirmative and negative covenants for Green Plains Trade, including maintaining a minimum fixed charge coverage ratio of 1.15 to 1.00. Capital expenditures are limited to $1.5 million per year under the credit facility. The credit facility also restricts distributions related to capital stock, with an exception for distributions up to 50% of net income if, on a pro forma basis, (a) availability has been greater than $10.0 million for the last 30 days and (b) the borrower would be in compliance with the fixed charge coverage ratio on the distribution date.

Green Plains Grain has a $100.0 million senior secured asset-based revolving credit facility, which matures on June 28, 2022. The credit facility finances working capital up to the maximum commitment based on eligible collateral equal to the sum of percentages of eligible cash, receivables and inventories, less miscellaneous adjustments. Advances are subject to an interest rate equal to LIBOR plus 3.00% or the lenders' base rate plus 2.00%. The credit facility also includes an accordion feature that enables the facility to be increased by up to $75.0 million with agent approval. The credit facility can also be increased by up to $50.0 million for seasonal borrowings. Total commitments outstanding cannot exceed $225.0 million. Depending on utilization, the total unused portion of the $100.0 million revolving credit facility is also subject to a commitment fee ranging from 0.375% to 0.50%.

Lenders receive a first priority lien on certain cash, inventory, accounts receivable and other assets owned by Green Plains Grain. The terms impose affirmative and negative covenants for Green Plains Grain, including maintaining minimum working capital to be the greater of (i) $18,000,000 and (ii) 18% of the sum of the then total commitment plus the aggregate

seasonal line commitments. Minimum tangible net worth is required to be greater than 21% of the sum of the then total commitment plus the aggregate seasonal line commitments. The credit facility also requires the company to maintain a maximum annual leverage of 6.00 to 1.00. Capital expenditures are limited to $8.0 million per year under the credit facility, plus equity contributions from the company and unused amounts of up to $8.0 million from the previous year. In addition, if the company has long-term indebtedness on the date of calculation of greater than $10.0 million, the credit facility requires the company to maintain a minimum fixed charge coverage ratio of 1.25 to 1.00 and a maximum long term debt capitalization of 40%.

Green Plains Grain has entered into short-term inventory financing agreements with a financial institution. The company has accounted for the agreements as short-term notes, rather than sales, and has elected the fair value option to offset fluctuations in market prices of the inventory. The company had no short-term notes payable related to these inventory financing agreements as of December 31, 2020.

Green Plains Commodity Management has an uncommitted $30.0 million revolving credit facility, which matures April 30, 2023, is used to finance margins related to its hedging programs. Advances are subject to variable interest rates equal to LIBOR plus 1.75%.

Ethanol Production Segment

On September 3, 2020, Green Plains Wood River and Green Plains Shenandoah, wholly-owned subsidiaries of the company, entered into a delayed draw loan agreement with MetLife Real Estate Lending LLC. The $75.0 million delayed draw loan matures on September 1, 2035 and is secured by substantially all of the assets of the Wood River and Shenandoah facilities. The proceeds from the loan will be used to add high protein processing systems at the Wood River and Shenandoah facilities as well as other capital expenditures.

The delayed draw loan bears interest at a fixed rate of 5.02%, plus an interest rate premium of 1.5% until the loan is fully drawn, which must occur within the 18 month draw period. After the earlier of the 18 month draw period or the loan being fully drawn, the interest rate premium may be adjusted quarterly from 0.00% to 1.50% based on the leverage ratio of total funded debt to EBITDA of Wood River and Shenandoah. Principal payments of $1.5 million per year begin 24 months from the closing date. Prepayments are prohibited until September 2024. Financial covenants of the delayed draw loan agreement include a minimum loan to value ratio of 50%, a minimum fixed charge coverage ratio of 1.25x commencing on June 30, 2021, a total debt service reserve of six months of future principal and interest payments and a minimum working capital requirement at Green Plains of not less than $0.10 per gallon of nameplate capacity or $102.3 million. The loan is guaranteed by the company and has certain limitations on distributions, dividends or loans to Green Plains by Wood River and Shenandoah unless immediately after giving effect to such action, there will not exist any event of default.

The company also has small equipment financing loans, finance leases on equipment or facilities, and other forms of debt financing.

Partnership Segment

Green Plains Partners, through a wholly owned subsidiary, has a $135.0 million credit facility to fund working capital, capital expenditures and other general partnership purposes. The credit facility was amended on June 4, 2020, decreasing the size of the facility from $200.0 million to $135.0 million. The amended credit facility consists of a $130.0 million term loan and a $5.0 million revolver, and matures on December 31, 2021. The partnership made $30.0 million in principal payments on the term loan during fiscal year 2020 including $10.0 million related to the sale of the Hereford, Texas ethanol plant. As of December 31, 2020, no additional prepayments on the term loan were required or paid. Monthly principal payments of $2.5 million are required October 15, 2020 through April 15, 2021, with a step up to monthly payments of $3.2 million beginning May 15, 2021 through maturity.

In certain situations we are required to make prepayments on the outstanding principal balance on the credit facility. If at any time our cash balance exceeds $2.5 million for more than five consecutive business days, prepayments of outstanding principal are required in an amount equal to the excess cash. The partnership is also required to prepay outstanding principal on the credit facility with 100% of net cash proceeds from any asset disposition or recovery event. Any prepayments on the term loan are applied to the remaining principal balance in inverse order of maturity, including the final payment.

The term loan balance, and any advances on the revolver, are subject to a floating interest rate based on a 1.0% LIBOR floor plus 4.50% to 5.25% dependent upon the preceding fiscal quarter's consolidated leverage ratio. However, if less than $40.0 million of prepayments in excess of the scheduled monthly payments have been made prior to April 1, 2021, the term loan balance and any advances on the revolver will be subject to a floating rate based on a 1.00% Libor floor plus 5.00% to

5.75% dependent upon the preceding fiscal quarter’s consolidated leverage ratio. The unused portion of the revolver is also subject to a commitment fee of 0.50%. The credit facility also allows for swing line loans subject to the revolver availability. Swing line loans are subject to a floating interest rate based on the Prime Rate plus 3.5% to 4.25% dependent upon the preceding fiscal quarter’s consolidated leverage ratio. Under the terms of the credit facility, swing line loans must be repaid within 10 days of the date of the advance. As of December 31, 2020, the term loan had a balance of $100.0 million and an interest rate of 6.00% and there were no outstanding swing line loans.

The partnership’s obligations under the credit facility are secured by a first priority lien on (i) the equity interests of the partnership’s present and future subsidiaries, (ii) all of the partnership’s present and future personal property, such as investment property, general intangibles and contract rights, including rights under any agreements with Green Plains Trade, and (iii) all proceeds and products of the equity interests of the partnership’s present and future subsidiaries and its personal property and (iv) substantially all of the partnership’s real property and material leases of real property. The terms impose affirmative and negative covenants, including restrictions on the partnership’s ability to incur additional debt, acquire and sell assets, create liens, invest capital, pay distributions and materially amend the partnership’s commercial agreements with Green Plains Trade. The credit facility also requires the partnership to maintain a maximum consolidated leverage ratio, as of the end of any fiscal quarter, of no more than 3.0x that decreases 0.25x each quarter to 1.50x by December 31, 2021, and a minimum consolidated debt service coverage ratio of 1.1x, each of which is calculated on a pro forma basis with respect to acquisitions and divestitures occurring during the applicable period. The consolidated leverage ratio is calculated by dividing total funded indebtedness by the sum of the four preceding fiscal quarters’ consolidated EBITDA. The consolidated debt service coverage ratio is calculated by taking the sum of the four preceding fiscal quarters’ consolidated EBITDA minus income taxes and consolidated capital expenditures for such period divided by the sum of the four preceding fiscal quarters’ consolidated interest charges plus consolidated scheduled funded debt payments for such period.

Under the amended terms of the credit facility, the partnership may make quarterly distribution payments in an aggregate amount not to exceed $0.12 per outstanding unit, so long as (i) no default has occurred and is continuing, or would result from payment of the distribution, and (ii) the partnership and its subsidiaries are in compliance with its financial covenants and remain in compliance after payment of the distribution. The credit facility is not guaranteed by the company.

The facility, which is supported by a group of financial institutions, will mature on December 31, 2021 unless extended by agreement of the lenders or replaced by another funding source. While the partnership has not yet renegotiated the credit facility or secured additional funding necessary to repay the loan, the partnership believes it is probable that it will source appropriate funding given the partnership’s consistent and stable fee-based cash flows, ongoing profitability, low debt leverage and history of obtaining financing on reasonable commercial terms. In the unlikely scenario that the partnership is unable to refinance its debt with the lenders prior to its maturity, the partnership will consider other financing sources, including but not limited to, the restructuring or issuance of new debt with a different lending group, the issuance of additional partnership units, other strategic actions to extinguish the debt, or support from the company.

In June 2013, the partnership, through a wholly owned subsidiary, Birmingham BioEnergy, was a recipient of qualified low income community investment notes in conjunction with New Markets Tax Credits financing related to the Birmingham, Alabama terminal. Two promissory notes payable of $1.9 million and $8.1 million, and a note receivable of $8.1 million, were issued in connection with this transaction. On December 31, 2019, the parties to the transaction executed certain provisions under the agreements whereby the promissory notes payable totaling $10.0 million were assigned to BlendStar in satisfaction of the $8.1 million note receivable. The partnership previously accounted for the $1.9 million promissory note payable as grant revenue, which was reflected as a reduction in the carrying value of the property and equipment at Birmingham BioEnergy and recognized in earnings as a decrease in depreciation expense over the useful life of the assets. The remaining $8.1 million promissory note payable and note receivable between Birmingham BioEnergy and BlendStar were forgiven in conjunction with the closing on December 31, 2019.

Covenant Compliance

The company was in compliance with its debt covenants as of December 31, 2020 and 2019.

Restricted Net Assets

At December 31, 2020, there were approximately $77.7 million of net assets at the company’s subsidiaries that could not be transferred to the parent company in the form of dividends, loans or advances due to restrictions contained in the credit facilities of these subsidiaries.

13. STOCK-BASED COMPENSATION

On May 6, 2020, the shareholders of the company approved the 2019 Equity Incentive Plan which granted an additional 1.6 million shares of common stock for stock-based compensation. All shares remaining under the 2009 Equity Incentive Plan rolled into the 2019 Equity Incentive Plan effective May 6, 2020. The 2019 Equity Inventive Plan reserves 5.7 million shares of common stock for issuance to its directors and employees. The plan provides for shares, including options to purchase shares of common stock, stock appreciation rights tied to the value of common stock, restricted stock, performance share awards, and restricted and deferred stock unit awards, to be granted to eligible employees, non-employee directors and consultants. The company measures stock-based compensation at fair value on the grant date, with no adjustments for estimated forfeitures. The company records noncash compensation expense related to equity awards in its consolidated financial statements over the requisite period on a straight-line basis.

Grants under the equity incentive plans may include stock options, stock awards, performance share awards or deferred stock units:

- Restricted Stock Awards – Restricted stock awards may be granted to directors and employees that vest immediately or over a period of time as determined by the compensation committee. Stock awards granted to date vested immediately and over a period of time, and included sale restrictions. Compensation expense is recognized on the grant date if fully vested or over the requisite vesting period.

- Deferred Stock Units – Deferred stock units may be granted to directors and employees that vest immediately or over a period of time as determined by the compensation committee. Deferred stock units granted to date vest over a period of time with underlying shares of common stock that are issuable after the vesting date. Compensation expense is recognized on the grant date if fully vested, or over the requisite vesting period.

- Performance Share Awards – Performance share awards may be granted to directors and employees that cliff-vest after a period of time as determined by the compensation committee. Performance share awards granted to date cliff-vest after a period of time, and included sale restrictions. Compensation expense is recognized over the requisite vesting period.

- Stock Options – Stock options may be granted that can be exercised immediately in installments or at a fixed future date. Certain options are exercisable regardless of employment status while others expire following termination. Options issued to date could have been exercised immediately or at future vesting dates, and expired five to eight years after the grant date. Compensation expense for stock options that vest over time is recognized on a straight-line basis over the requisite service period.

Restricted Stock Awards and Deferred Stock Units

The non-vested restricted stock award and deferred stock unit activity for the year ended December 31, 2020, are as follows:

	Non-Vested Shares and Deferred Stock Units	Weighted-Average Grant-Date Fair Value	Weighted-Average Remaining Vesting Term (in years)
Non-Vested at December 31, 2019	751,315	$ 17.48	
Granted	650,745	9.79	
Forfeited	(21,241)	16.01	
Vested	(352,080)	18.83	
Non-Vested at December 31, 2020	1,028,739	$ 12.18	1.7

Performance Share Awards

On March 18, 2020, the board of directors granted performance shares to be awarded in the form of common stock to certain participants of the plan. These performance shares vest based on the level of achievement of certain performance goals, including the incremental value achieved from the company's high-protein initiatives, annual production levels and return on investment (ROI). Performance shares granted in 2020 do not contain market based factors requiring a Monte Carlo valuation model. The performance shares were granted at a target of 100%, but each performance share will reduce or increase depending on results for the performance period. If the company achieves the maximum performance goals, the

maximum amount of shares available to be issued pursuant to the 2020 awards are 641,823 performance shares which represents approximately 276% of the 232,566 performance shares which remain outstanding. The actual number of performance shares that will ultimately vest is based on the actual performance targets achieved at the end of the performance period.

On February 19, 2019 and March 19, 2018, the board of directors granted performance shares to be awarded in the form of common stock to certain participants of the plan. These performance shares vest based on the company’s average return on net assets (RONA) and the company’s total shareholder return (TSR), as further described herein. The performance shares vest on the third anniversary of the grant, if the RONA and TSR criteria are achieved and the participant is then employed by the company. Fifty percent of the performance shares vest based upon the company’s ability to achieve a predetermined RONA during the three year performance period. The remaining fifty percent of the performance shares vest based upon the company’s total TSR during the three year performance period relative to that of the company’s performance peer group.

The performance shares were granted at a target of 100%, but each performance share will reduce or increase depending on results for the performance period for the company's RONA, and the company’s TSR relative to that of the performance peer group. If the company’s RONA and TSR achieve the maximum goals, the maximum amount of shares available to be issued pursuant to the 2018 and 2019 awards are 428,104 performance shares or 150% of the 285,403 performance shares which remain outstanding. The actual number of performance shares that will ultimately vest is based on the actual percentile ranking of the company’s RONA, and the company’s TSR compared to the peer performance at the end of the performance period.

For performance shares which include market based factors, the company uses the Monte Carlo valuation model to estimate the fair value of the performance shares on the date of the grant. The weighted average assumptions used by the company in applying the Monte Carlo valuation model for performance share grants and related valuation are illustrated in the following table:

	FY 2019 Performance Awards	FY 2018 Performance Awards
Risk-free interest rate	2.45 %	2.44 %
Dividend yield	3.13 %	2.64 %
Expected volatility	41.69 %	45.11 %
Monte Carlo valuation	99.62 %	97.39 %
Closing stock price on the date of grant	$ 15.34	$ 18.15

The non-vested performance share award activity for the year ended December 31, 2020, is as follows:

	Performance Shares	Weighted-Average Grant-Date Fair Value	Weighted-Average Remaining Vesting Term (in years)
Non-Vested at December 31, 2019	285,403	$ 16.38	
Granted	232,566	10.64	
Non-Vested at December 31, 2020	517,969	$ 13.80	1.8

Stock Options

The fair value of the stock options is estimated on the date of the grant using the Black−Scholes option−pricing model, a pricing model acceptable under GAAP. The expected life of the options is the period of time the options are expected to be outstanding. The company did not grant any stock option awards during the years ended December 31, 2020, 2019 and 2018.

The activity related to the exercisable stock options for the year ended December 31, 2020, is as follows:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2019	10,000	$ 16.95	0.2	$ -
Expired	(10,000)	16.95	-	-
Outstanding at December 31, 2020	-	$ -	-	$ -
Exercisable at December 31, 2020	-	$ -	-	$ -

Green Plains Partners

Green Plains Partners has a long-term incentive plan (LTIP) intended to promote the interests of the partnership, its general partner and affiliates by providing unit-based incentive compensation awards to employees, consultants and directors to encourage superior performance. The LTIP reserves 2,500,000 common limited partner units for issuance in the form of options, restricted units, phantom units, distribution equivalent rights, substitute awards, unit appreciation rights, unit awards, profit interest units or other unit-based awards. The partnership measures unit-based compensation related to equity awards in its consolidated financial statements over the requisite service period on a straight-line basis.

The non-vested unit-based awards activity for the year ended December 31, 2020, are as follows:

	Non-Vested Shares and Deferred Stock Units	Weighted-Average Grant-Date Fair Value	Weighted-Average Remaining Vesting Term (in years)
Non-Vested at December 31, 2019	22,856	$ 14.00	
Granted	47,620	6.72	
Vested	(22,856)	14.00	
Non-Vested at December 31, 2020	47,620	$ 6.72	0.5

Stock-Based and Unit-Based Compensation Expense

Compensation costs for stock-based and unit-based payment plans during the years ended December 31, 2020, 2019 and 2018, were approximately $7.9 million, $9.7 million and $11.4 million, respectively. At December 31, 2020, there were $9.6 million of unrecognized compensation costs from stock-based and unit-based compensation related to non-vested awards. This compensation is expected to be recognized over a weighted-average period of approximately 1.7 years. The potential tax benefit related to stock-based payment is approximately 24.0% of these expenses.

14. EARNINGS PER SHARE

Basic earnings per share, or EPS, is calculated by dividing net income available to common stockholders by the weighted average number of common shares outstanding during the period.

The company computed diluted EPS by dividing net income on an if-converted basis, adjusted to add back net interest expense related to the convertible debt instruments, by the weighted average number of common shares outstanding during the period, adjusted to include the shares that would be issued if the convertible debt instruments were converted to common shares and the effect of any outstanding dilutive securities. In addition, due to the presentation of GPCC as discontinued operations, the company has presented basic and diluted earnings per share from both continuing operations and from discontinued operations.

The basic and diluted EPS are calculated as follows (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Basic EPS:			
Net income (loss) from continuing operations [1]	$ (108,775)	$ (167,689)	$ 4,384
Net income from discontinued operations	-	829	11,539
Net income (loss) attributable to Green Plains	$ (108,775)	$ (166,860)	$ 15,923
Weighted average shares outstanding - basic	34,631	38,111	40,320
EPS from continuing operations - basic	$ (3.14)	$ (4.40)	$ 0.11
EPS from discontinued operations - basic	-	0.02	0.28
EPS - basic	$ (3.14)	$ (4.38)	$ 0.39
Diluted EPS: [2]			
Net income (loss) from continuing operations [1]	$ (108,775)	$ (167,689)	$ 4,384
Net income from discontinued operations	-	829	11,539
Net income (loss) attributable to Green Plains	$ (108,775)	$ (166,860)	$ 15,923
Weighted average shares outstanding - basic	34,631	38,111	40,320
Effect of dilutive convertible debt:			
Effect of dilutive stock-based compensation awards	-	-	934
Weighted average shares outstanding - diluted	34,631	38,111	41,254
EPS from continuing operations - diluted	$ (3.14)	$ (4.40)	$ 0.11
EPS from discontinued operations - diluted	-	0.02	0.28
EPS - diluted	$ (3.14)	$ (4.38)	$ 0.39
Anti-dilutive weighted-average convertible debt and stock-based compensation [3]	14,089	10,560	7,283

(1) Net income (loss) from continuing operations can be recalculated from the consolidated statements of operations by taking the net income (loss) from continuing operations including noncontrolling interest less net income attributable to noncontrolling interests.
(2) The effect related to interest and amortization on convertible debt on an if converted basis has been excluded from diluted EPS for the periods presented as the inclusion of these effects would have been antidilutive.
(3) The effect related to the company's convertible debt and certain stock-based compensation awards has been excluded from diluted EPS for the periods presented as the inclusion of these shares would have been antidilutive.

15. STOCKHOLDERS' EQUITY

Treasury Stock

The company holds 11.8 million shares of its common stock at a cost of $131.3 million. Treasury stock is recorded at cost and reduces stockholders' equity in the consolidated balance sheets. When shares are reissued, the company will use the weighted average cost method for determining the cost basis. The difference between the cost and the issuance price is added or deducted from additional paid-in capital.

Share Repurchase Program

The company's board of directors authorized a share repurchase program of up to $200.0 million. Under the program, the company may repurchase shares in open market transactions, privately negotiated transactions, accelerated share buyback programs, tender offers or by other means. The timing and amount of repurchase transactions are determined by its management based on market conditions, share price, legal requirements and other factors. The program may be suspended, modified or discontinued at any time without prior notice. The company repurchased 880,979 shares of common stock for approximately $11.5 million during 2020. Since inception, the company has repurchased 7,396,936 shares of common stock for approximately $92.8 million under the program.

Dividends

On June 18, 2019, the company announced that its board of directors decided to suspend its future quarterly cash dividend following the June 14, 2019 dividend payment, in order to retain and redirect cash flow to the company's Project 24 operating expense equalization plan, the deployment of high-protein technology and its stock repurchase program.

For each calendar quarter commencing with the quarter ended September 30, 2015, the partnership agreement provides for a quarterly distribution to be paid within 45 days after the end of the quarter, provided the partnership has sufficient available cash. Available cash generally means, all cash and cash equivalents on hand at the end of that quarter less cash reserves established by the general partner of the partnership plus all or any portion of the cash on hand resulting from working capital borrowings made subsequent to the end of that quarter. On January 21, 2021, the board of directors of the general partner of the partnership declared a cash distribution of $0.12 per unit on outstanding common units. The distribution is payable on February 12, 2021, to unitholders of record at the close of business on February 5, 2021.

Accumulated Other Comprehensive Income

Changes in accumulated other comprehensive income are associated primarily with gains and losses on derivative financial instruments. Amounts reclassified from accumulated other comprehensive income are as follows (in thousands):

	Year Ended December 31,			Statements of Operations Classification
	2020	2019	2018	
Gains (losses) on cash flow hedges:				
Commodity derivatives	$ 5,538	$ -	$ 3,648	(1)
Commodity derivatives	(2,115)	-	1,258	(2)
Total gains on cash flow hedges from continuing operations	3,423	-	4,906	(3)
Gains (losses) on cash flow hedges from discontinued operations, net of income taxes	-	38,795	(10,092)	(4)
Income tax expense	857	-	1,483	(5)
Amounts reclassified from accumulated other comprehensive income (loss)	$ 2,566	$ 38,795	$ (6,669)	

(1) Revenues
(2) Costs of goods sold
(3) Income (loss) from continuing operations before income taxes and income (loss) from equity method investees
(4) Net income from discontinued operations, net of income taxes
(5) Income tax benefit

At December 31, 2020 and 2019, the company's consolidated balance sheets reflected unrealized losses of $2.2 million and $11.1 million, net of tax, in accumulated other comprehensive loss, respectively.

16. RESTRUCTURING ACTIVITIES

In the second quarter of 2018, the company announced its portfolio optimization program of which one of the five strategic objectives was to reduce controllable expenses. As part of the program, the company implemented a workforce reduction at certain of its facilities, including its corporate location. The associated severance costs were recognized at the time both the employee and employer were irrevocably committed to the terms of the separation. As of December 31, 2018, the company recognized a $4.2 million charge for such workforce reductions it had implemented through that date with $3.8 million classified as selling, general and administrative expense and $0.4 million classified as costs of goods sold. Of the $4.2 million charge, $3.1 million was recorded in corporate activities, $0.7 million was recorded in the agribusiness and energy services segment, $0.4 million was recorded in the ethanol production segment. Approximately $2.7 million of the total charge was included in accrued liabilities as of December 31, 2018 and paid in full during 2019.

17. INCOME TAXES

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the carrying amounts of existing assets and liabilities and their respective tax bases, and net operating loss and tax credit carry-forwards. Deferred tax assets and liabilities are measured using enacted rates expected to be applicable to taxable income in the years those temporary differences are recovered or settled. The effect on deferred tax assets and liabilities from a change in tax rates is recognized in income during the period that includes the enactment date. A valuation allowance is recorded by the company when it is more likely than not that some portion or all of a deferred tax asset will not be realized.

The CARES Act was signed into law on March 27, 2020. The CARES Act includes several significant business tax provisions including elimination of the taxable limit for certain net operating losses (“NOL”), allowing businesses to carry back NOLs arising in 2018, 2019 and 2020 to the five prior tax years, accelerating refunds of previously generated corporate AMT credits, and loosening the business interest limitation under §163(j) from 30% to 50%. The CARES Act also contains an employee retention credit to encourage employers to maintain headcounts even if employees cannot report to work because of issues related to COVID-19. In the second quarter of 2020, the company filed its preliminary 2019 federal income tax return, as well as a refund claim with the IRS to carry back our 2019 NOL to prior years. In the fourth quarter of 2020 the company filed its final 2019 federal income tax return and trued-up our 2019 NOL. The company recorded an income tax benefit of approximately $41.6 million related to the CARES Act including adjustments to certain valuation allowances.

Green Plains Partners is a limited partnership, which is treated as a flow-through entity for federal income tax purposes and is not subject to federal income taxes. As a result, the consolidated financial statements do not reflect such income taxes on pretax income or loss attributable to the noncontrolling interest in the partnership.

Income tax expense (benefit) consists of the following (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Current	$ (37,047)	$ (2,177)	$ 7,758
Deferred	(13,336)	(18,881)	(24,484)
Total	(50,383)	(21,058)	(16,726)
Less: Income tax expense - discontinued operations	-	258	3,421
Income tax benefit - continuing operations	$ (50,383)	$ (21,316)	$ (20,147)

Differences between income tax expense from continuing operations at the statutory federal income tax rate and as presented on the consolidated statements of operations are summarized as follows (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Tax expense at federal statutory rate	$ (33,698)	$ (36,317)	$ 1,060
State income tax expense, net of federal benefit	(802)	(7,839)	702
Nondeductible compensation	421	762	921
Noncontrolling interests	(4,015)	(3,961)	(4,370)
Unrecognized tax benefits	(28)	36	15,148
R&D credits	-	(323)	(34,979)
Increase in valuation allowance	6,279	25,314	-
Disposition of subsidiary	-	(373)	(1,022)
Tax Cuts and Jobs Act impact	-	-	278
Stock compensation	721	369	993
Audit adjustments	-	-	559
Amended return adjustments	(19,786)	-	374
Other	525	1,016	189
Income tax benefit	$ (50,383)	$ (21,316)	$ (20,147)

Significant components of deferred tax assets and liabilities are as follows (in thousands):

	December 31,	
	2020	2019
Deferred tax assets:		
Net operating loss carryforwards - Federal	$ 11,670	$ 27,935
Net operating loss carryforwards - State	10,875	8,788
Tax credit carryforwards - Federal	64,081	49,937
Tax credit carryforwards - State	7,369	7,750
Derivative financial instruments	-	342
Deferred revenue	149	795
Interest expense carryforward	6,609	5,539
Investment in partnerships	45,519	46,774
Inventory valuation	290	1,560
Stock-based compensation	1,439	1,347
Accrued expenses	5,351	4,325
Leases	7,958	6,993
Organizational and start-up costs	1,047	-
Other	337	51
Total	162,694	162,136
Valuation allowance	(43,336)	(33,337)
Total deferred tax assets	119,358	128,799
Deferred tax liabilities:		
Convertible debt	(9,154)	(12,266)
Fixed assets	(104,364)	(107,909)
Derivative financial instruments	(724)	-
Organizational and start-up costs	-	(4,484)
Right-of-use assets	(5,116)	(4,140)
Total deferred tax liabilities	(119,358)	(128,799)
Deferred income taxes	$ -	$ -

At December 31, 2020, the company has federal R&D credits of $67.8 million which will begin to expire in 2033. The company also has $7.4 million of state credits which will expire beginning in 2021. The company has federal net operating losses of $11.7 million which do not have an expiration date.

The company increased the valuation allowance associated with its net deferred tax assets due to uncertainty that it will realize these assets in the future. The valuation allowance on deferred tax assets was recognized as a result of negative evidence, including cumulative losses in recent years, outweighing the more subjective positive evidence. Management considers whether it is more likely than not that some or all of the deferred tax assets will be realized, which is dependent on the generation of future taxable income and other tax attributes during the periods those temporary differences become deductible. Scheduled reversals of deferred tax liabilities, projected future taxable income, and tax planning strategies are considered to make this assessment. The company will continue to regularly assess the realizability of deferred tax assets. Changes in earnings performance and future earnings projections, among other factors, may cause the company to adjust its valuation allowance on deferred tax assets, which would impact the company's results of operations in the period it is determined that these factors have changed.

The company's federal income tax returns for the tax years ended December 31, 2014 and 2017 are currently under audit. The company's federal returns for the tax years ended December 31, 2015, 2016, 2018 and 2019 are still subject to audit. A reconciliation of unrecognized tax benefits is as follows (in thousands):

Unrecognized Tax Benefits	
Balance at January 1, 2020	$ 51,596
Additions for prior year tax positions	27
Additions for current year tax positions	(54)
Balance at December 31, 2020	$ 51,569

Recognition of these tax benefits would favorably impact the company's effective tax rate. Unrecognized tax benefits of $51.6 million include $51.4 million recorded as a reduction of the deferred asset associated with the federal tax credit carryforwards. Interest and penalties associated with uncertain tax positions are accrued as part of income taxes payable.

As a result of delays due to the COVID-19 pandemic, the progress of our ongoing 2014 federal audit has been significantly impacted. While progress has been slow, we believe it is reasonably possible that approximately $23.0 million in unrecognized tax benefits related to R&D credits may be settled within the coming year as a result of the ongoing federal audit. In addition, the results of the current audit may cause the company to significantly increase or decrease the unrecognized tax benefits associated with R&D credits for periods not under audit. At this time, the company does not have enough information to be able to reasonably estimate the potential impact.

18. COMMITMENTS AND CONTINGENCIES

Adoption of ASC 842

On January 1, 2019, the company adopted the amended guidance in ASC 842, *Leases*, and all related amendments ("new lease standard") and applied it to all leases using the optional transition method which requires the amended guidance to be applied at the date of adoption. The new lease standard had a material impact on the company's consolidated balance sheets, increasing total assets and total liabilities for continuing operations by $60.2 million upon adoption. It did not have an impact on the consolidated statement of operations for the year ended December 31, 2019.

The company's leases do not specify an implicit interest rate. Therefore, the incremental borrowing rate was used based on information available at commencement date to determine the present value of future payments.

Lease Expense

The company leases certain facilities, parcels of land, and equipment, with remaining terms ranging from less than one year to 16.9 years. The land and facility leases include renewal options. The renewal options are included in the lease term only for those sites or locations in which they are reasonably certain to be renewed. Equipment renewals are not considered reasonably certain to be exercised as they typically renew with significantly different underlying terms.

The company may sublease certain of its railcars to third parties on a short-term basis. The subleases are classified as operating leases, with the associated sublease income being recognized on a straight-line basis over the lease term.

The components of lease expense are as follows (in thousands):

	Year Ended December 31,	
	2020	2019
Lease expense		
Operating lease expense	$ 20,771	$ 20,806
Variable lease expense [1]	1,681	824
Total lease expense	$ 22,452	$ 21,630

(1) Represents amounts incurred in excess of the minimum payments required for a certain building lease and for the handling and unloading of railcars for a certain land lease, offset by railcar lease abatements provided by the lessor when railcars are out of service during periods of maintenance or upgrade.

Supplemental cash flow information related to operating leases is as follows (in thousands):

	Year Ended December 31,	
	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 20,864	$ 21,459
Right-of-use assets obtained in exchange for lease obligations:		
Operating leases	32,713	11,176
Right-of-use assets and lease obligations derecognized due to lease modifications:		
Operating leases	5,176	1,726

Supplemental balance sheet information related to operating leases is as follows:

	2020	2019
Weighted average remaining lease term	6.2 years	6.6 years
Weighted average discount rate	4.55%	5.46%

Aggregate minimum lease payments under the operating lease agreements for future fiscal years as of December 31, 2020 are as follows (in thousands):

Year Ending December 31,		Amount
2021	$	17,303
2022		15,289
2023		11,711
2024		9,902
2025		6,441
Thereafter		15,350
Total		75,996
Less: Present value discount		(11,545)
Lease liabilities	$	64,451

Lease Revenue

As described in *Note 4 – Revenue*, the majority of the partnership's segment revenue is generated though their storage and throughput services and rail transportation services agreements with Green Plains Trade and are accounted for as lease revenue. Leasing revenues do not represent revenues recognized from contracts with customers under ASC 606, and are accounted for under ASC 842, *Leases*. Lease revenue associated with agreements with Green Plains Trade are eliminated upon consolidation. The remaining lease revenue is not material to the company.

Refer to *Note 4 – Revenue* for further discussion on lease revenue.

Commodities

As of December 31, 2020, the company had contracted future purchases of grain, corn oil, natural gas, ethanol and distillers grains, valued at approximately $302.8 million.

Legal

The company is currently involved in litigation that has arisen in the ordinary course of business, but does not believe any pending litigation will have a material adverse effect on its financial position, results of operations or cash flows.

19. EMPLOYEE BENEFIT PLANS

The company offers eligible employees a comprehensive employee benefits plan that includes health, dental, vision, life and accidental death, short-term disability and long-term disability insurance, and flexible spending accounts. The company also offers a 401(k) plan enabling eligible employees to save for retirement on a tax-deferred basis up to the limits allowed under the Internal Revenue Code and matches up to 4% of eligible employee contributions. Employee and employer contributions are 100% vested immediately. Employer contributions to the 401(k) plan for the years ended December 31, 2020, 2019 and 2018 were $1.5 million, $1.6 million and $2.0 million, respectively.

The company contributes to a defined benefit pension plan. Since January of 2009, the benefits under the plan were frozen; however, the company remains obligated to ensure the plan is funded according to its requirements. As of December 31, 2020, the plan's assets were $5.6 million and liabilities were $6.8 million. At December 31, 2020 and 2019, net liabilities of $1.2 million were included in other liabilities on the consolidated balance sheets, respectively.

20. RELATED PARTY TRANSACTIONS

Green Plains Cattle Company LLC

The company engaged in certain related party transactions with GPCC, which was considered a related party until the fourth quarter of 2020 at which time the company's remaining 50% interest was sold. The company provided a variety of shared services to GPCC, including accounting and finance, payroll and human resources, information technology, legal, communications and treasury activities. The company reduced selling, general and administrative expenses by $1.2 million and $0.5 million related to shared services provided for the years ended December 31, 2020 and 2019, respectively. The company had $2.2 million outstanding receivables related to the shared service agreement and expenses paid on behalf of GPCC as of December 31, 2019.

Green Plains Trade Group, a subsidiary of the company, enters into certain sale contracts with GPCC during the normal course of business. Related party revenues associated with GPCC were $8.2 million and $4.0 million for the years ended December 31, 2020 and 2019, respectively.

Mr. Ejnar Knudsen, a member of the company's board of directors, has an indirect ownership interest in GPCC of 0.0736% by reason of his ownership in TGAM Agribusiness Fund LP. Based on the purchase price, the value of that ownership interest is approximately $0.1 million. Mr. Knudsen also is the CEO and partial owner of AGR Partners LLC (AGR) which provides investment advisory services to TGAM Agribusiness Fund LP pursuant to a sub-advisory agreement between AGR Partners LLC and Nuveen Alternative Advisors LLC, which is the investment manager for TGAM Agribusiness Fund LP.

Aircraft Leases

The company entered into two agreements with an entity controlled by Wayne Hoovestol for the lease of two aircrafts. Mr. Hoovestol is chairman of the company's board of directors. Given the limited amount of travel during fiscal year 2020, the companies have agreed to defer the monthly payment until excess carryover hours are used. As of December 31, 2020, the company has approximately 61 hours of flight time available to be used. Once used, the company agreed to pay $11,588 per month for the combined use of up to 125 hours per year of the aircrafts. Flight time in excess of 125 hours per year will incur additional hourly charges. During the years ended December 31, 2020, 2019 and 2018, payments related to these leases totaled $56 thousand, $129 thousand and $159 thousand, respectively. The company had no outstanding payables related to these agreements at December 31, 2020 and $17 outstanding payables related to these agreements at December 31, 2019.

21. EQUITY METHOD INVESTMENTS

Green Plains Cattle Company LLC

On September 1, 2019, the company formed a joint venture with TGAM and StepStone. Such parties entered into the Second Amended and Restated Limited Liability Company Agreement of GPCC effective as of September 1, 2019. GPCC was previously a wholly owned subsidiary of Green Plains. Green Plains also entered into a Securities Purchase Agreement with TGAM and StepStone, whereby TGAM and StepStone purchased an aggregate of 50% of the membership interests of GPCC from Green Plains. After closing, GPCC was no longer consolidated in the company's consolidated financial statements and the GPCC investment was accounted for using the equity method of accounting. GPCC results prior to its disposition are classified as discontinued operations in our current and prior period financials.

GPCC conducts the business of the joint venture, including (i) owning and operating the cattle feeding operations (as defined below), and (ii) any other activities approved by GPCC's board of managers. GPCC continues to have the capacity to support 355,000 head of cattle and has approximately 24.1 million bushels of grain storage capacity.

The company did not consolidate any part of the assets or liabilities or operating results of its equity method investee. The company's share of net income or loss in the investee increased or decreased, as applicable, the carrying value of the investment. With respect to GPCC, the company determined that this entity did not represent a variable interest entity and consolidation was not required. In addition, although the company had the ability to exercise significant influence over the joint venture through board representation and voting rights, all significant decisions required the consent of the other investors without regard to economic interest.

On October 1, 2020, the company sold its remaining 50% joint venture interest in GPCC to AGR, TGAM Agribusiness Fund LP and StepStone for $80.5 million in cash, plus closing adjustments. The transaction resulted in a reduction in other assets of $69.7 million as a result of removal of the equity method investment in GPCC, and a reduction in accumulated other

comprehensive income (loss) of $10.7 million as a result of the removal of the company's share of equity method investees accumulated other comprehensive loss.

Summarized Financial Information

Our equity method investments are summarized in the following table (in thousands):

	Ownership as of December 31, 2020	Year Ended December 31,	
		2020	2019
Green Plains Cattle Company LLC [1]	0%	$ -	$ 64,161
Other	Various	3,994	4,837
Total		$ 3,994	$ 68,998

(1) The equity method investment in GPCC is impacted by the effect of deferred gains or losses on cattle sale contracts designated in a cash flow hedge relationship. Pretax accumulated other comprehensive loss for GPCC was $16.2 million as of December 31, 2019.

Earnings from equity method investments, net of income taxes, were as follows (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Green Plains Cattle Company LLC [1]	$ 20,531	$ 2,839	$ -
All others	562	(42)	(596)
Total income (loss) from equity method investments, net of income taxes	$ 21,093	$ 2,797	$ (596)
Distributions from equity method investments	$ 27,910	$ 320	$ -
Earnings from equity method investments, net of distributions	$ (6,817)	$ 2,477	$ (596)

(1) Pretax equity method earnings of GPCC were $27.0 and $3.8 million for the years ended December 31, 2020 and 2019.

The company reports its proportional share of equity method investment income (loss) in the consolidated statements of operations. The company's share of equity method investees other comprehensive income arising during the period is included in accumulated other comprehensive loss in the consolidated balance sheet.

The following table present summarized information of GPCC.

	December 31, 2020 [1]	December 31, 2019 [1]
Total revenues	$ 747,824	$ 370,383
Total operating expenses	693,753	362,878
Net income	$ 54,071	$ 7,505

(1) GPCC equity method treatment began on September 1, 2019 and ended on October 1, 2020. As such, fiscal year 2020 includes nine months of GPCC operations while fiscal year 2019 includes four months of GPCC operations.

	December 31, 2019
Balance sheet:	
Current assets	$ 516,324
Noncurrent assets	73,922
Current liabilities	461,534
Noncurrent liabilities	390
Net assets	$ 128,322

22. QUARTERLY FINANCIAL DATA (Unaudited)

The following table includes unaudited financial data for each of the quarters within the years ended December 31, 2020 and 2019 (in thousands, except per share amounts), which is derived from the company's consolidated financial statements. In management's opinion, the financial data reflects all of the adjustments necessary for a fair presentation of the quarters presented. The operating results for any quarter are not necessarily indicative of results for any future period.

	Three Months Ended			
	December 31, 2020	September 30, 2020	June 30, 2020 (1)	March 31, 2020
Revenues	$ 478,764	$ 424,062	$ 388,024	$ 632,869
Costs and expenses (2)	513,559	438,267	407,392	687,197
Operating loss	(34,795)	(14,205)	(19,368)	(54,328)
Other expense	(10,403)	(10,154)	(9,609)	(8,268)
Income tax benefit (expense) (3)	1,922	(7,280)	11,458	44,283
Net loss from continuing operations including noncontrolling interest	(43,100)	(30,733)	(5,474)	(10,347)
Net loss attributable to Green Plains	$ (49,630)	$ (34,486)	$ (8,214)	$ (16,445)
Basic and diluted earnings per share attributable to Green Plains (3):	$ (1.43)	$ (1.00)	$ (0.24)	$ (0.47)

	Three Months Ended			
	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019
Revenues	$ 715,677	$ 632,350	$ 630,570	$ 438,641
Costs and expenses	730,599	674,715	677,215	477,279
Operating loss	(14,922)	(42,365)	(46,645)	(38,638)
Other expense	(2,286)	(9,694)	(10,759)	(7,633)
Income tax benefit (expense) (4)	(19,514)	12,565	15,322	12,943
Net income (loss) from continuing operations including noncontrolling interest	(34,459)	(38,850)	(42,118)	(33,402)
Net income (loss) from discontinued operations, net of income taxes	-	3,359	1,939	(4,469)
Net income (loss) attributable to Green Plains	$ (39,749)	$ (38,970)	$ (45,342)	$ (42,799)
Basic and diluted earnings per share (5):				
Loss per share from continuing operations	$ (1.13)	$ (1.15)	$ (1.18)	$ (0.95)
Income (loss) per share from discontinued operations	-	0.09	0.05	(0.11)
Loss per share attributable to Green Plains	$ (1.13)	$ (1.06)	$ (1.13)	$ (1.06)

(1) During the third quarter of 2020, the company identified an immaterial issue which resulted in the overstatement of both revenues and cost of goods sold within the agribusiness and energy services segment as previously reported for the three and six months ended June 30, 2020. The second quarter revenues and cost of goods sold reflected in the quarterly financial data have been revised to correct these amounts.

(2) The fourth quarter of 2020 includes a pretax loss on sale of assets, net of $22.4 million related to the sale of the Hereford, Texas ethanol plant and a loss related to GPCC of $0.5 million. The third quarter of 2020 includes a gain of $2.0 million related to GPCC. The first quarter of 2020 includes a goodwill impairment charge of $24.1 million.

(3) The fourth quarter of 2020 includes the recognition of a $8.5 million valuation allowance which impacted income tax expense.

(4) The fourth quarter of 2019 includes the recognition of a $25.9 million valuation allowance which impacted income tax expense.

(5) Basic and diluted earnings per share are calculated independently for each of the quarters presented. Accordingly, the sum of the quarterly earnings per share amounts may not agree with the total year.

23. SUBSEQUENT EVENTS

BlackRock Note Facility

On February 9, 2021, Green Plains SPE LLC, a wholly owned subsidiary of the company and a special purpose entity (the Issuer) completed a $125.0 million, 5-year mezzanine note facility with funds and accounts managed by BlackRock. The proceeds will be used initially to support the construction and deployment of Ultra-High Protein technology and production at the Obion, Tennessee and Mount Vernon, Indiana facilities.

The junior secured mezzanine notes will mature on February 9, 2026 and are secured via first lien in the membership interests and real property of Green Plains Obion LLC and Green Plains Mount Vernon LLC. The Notes accrue interest at an annual rate of 11.75%. The Issuer may elect to pay an amount in cash equal to interest accruing at a rate of 6.00% per annum plus an amount equal to interest accruing at a rate of 6.75% per annum to be paid in kind. The entire outstanding principal balance, plus any accrued and unpaid interest is due upon maturity. Pursuant to the Indenture, the Issuer is required to comply with certain financial covenants regarding minimum liquidity and a maximum aggregate loan to value. The Notes can be retired or refinanced after 42 months with no prepayment premium. The Notes are guaranteed by the Company and have certain limitations on distributions, dividends or loans to Green Plains unless there will not exist any event of default. The Indenture provides for customary events of default. Additionally, as part of the transaction, BlackRock acquired 2,000,000 warrants for Green Plains stock (each warrant equal to one share of stock) with a strike price of $22.00 per share, which expire on February 9, 2026.

Disposition of Ord Ethanol Plant

On January 25, 2021, the company entered into an Asset Purchase Agreement to sell its ethanol plant located in Ord, Nebraska to GreenAmerica Biofuels Ord LLC. The transaction involves the disposition of 65 million gallons of nameplate capacity, and is being sold for $64.0 million, plus an estimated $6.0 million of related working capital. Correspondingly, the partnership entered into an Asset Purchase Agreement to sell its storage assets located adjacent to the Ord plant to the company for $27.0 million, which will be used to pay down debt, along with the transfer of associated railcar operating leases. As part of this transaction, upon closing, the quarterly storage and throughput minimum volume commitment with Green Plains Trade will be reduced to 217.7 mmg per quarter and the storage and throughput agreement with Green Plains Trade will be extended an additional year to June 30, 2029. The transaction is anticipated to close within 45 days, subject to customary closing conditions.

Exhibit 2.9(a)

ASSET PURCHASE AGREEMENT

dated as of December 11, 2020

by and between

HEREFORD ETHANOL PARTNERS, L.P.

as the Buyer

and

GREEN PLAINS HEREFORD LLC

as the Seller

TABLE OF CONTENTS

		PAGE
ARTICLE I	PURCHASE AND SALE	1
1.1	Purchase and Sale of Assets	1
1.2	ExcludedAssets	3
1.3	AssumedLiabilities	4
1.4	Excluded Liabilities	4
1.5	Assumed Contracts and Permits Not Assignable	6
ARTICLE II	PURCHASE PRICE	7
2.1	Purchase Price	7
2.2	Closing Amount	7
2.3	Inventories and Net Working Capital Adjustment	8
2.4	Prorations	10
2.5	Purchase Price Allocation	11
ARTICLE III	CLOSING	11
3.1	Closing	11
3.2	Closing Deliverables	11
ARTICLE IV	REPRESENTATIONS AND WARRANTIES OF THE SELLER	12
4.1	Organization and Qualification	13
4.2	Subsidiaries; Investments	13
4.3	Due Authorization; No Conflicts; Consents	13
4.4	Title to Assets	14
4.5	Real Property; Availability of Assets; Leases	14
4.6	Intentionally Deleted	15
4.7	Inventories	15
4.8	Intellectual Property	16
4.9	Material Contracts and Other Descriptions and Lists	17
4.10	Performance of Contracts, Etc.	18
4.11	Litigation	18
4.12	Compliance with Laws or Orders	19
4.13	Environmental Compliance	19
4.14	Taxes	20
4.15	Employee Benefit Plans	21
4.16	Employee Relationships	21
4.17	Events Subsequent to December 31, 2019	22
4.18	Brokerage	23

4.19	Insurance	23
4.20	Permits	24
4.21	All Necessary Assets	24
ARTICLE V	REPRESENTATIONS OF THE BUYER	24
5.1	Organization and Qualification	24
5.2	Due Authorization; No Conflicts; Consents	24
5.3	Brokerage	25
5.4	Financial Ability	25
5.5	No Litigation	25
ARTICLE VI	COVENANTS OF THE SELLER	25
6.1	Conduct of Business Prior to Closing	25
6.2	No Control of Other Party's Business	27
6.3	Access to Information	27
6.4	Conditions and Closing	28
6.5	Approvals and Consents of Third Parties	28
6.6	Notification of Changes	28
6.7	Supplement to Disclosure Schedules	29
6.8	Governmental Approvals	29
6.9	Release of Liens	29
6.10	Carve-Out Tracts	29
6.11	Shipment of Stored Grain	29
6.12	RFS Third Party Engineering Audit	30
6.13	Rail Cars	30
6.14	Confidentiality and Confidential Information	32
6.15	Exclusive Negotiations	33
ARTICLE VII	COVENANTS OF THE BUYER	33
7.1	Conditions and Closing	33
7.2	Notification of Changes	33
7.3	[Intentionally Deleted]	34
7.4	Governmental Approvals	34
7.5	Confidentiality	34
ARTICLE VIII	COVENANTS AND AGREEMENTS OF SELLER AND BUYER	34
8.1	Employee Matters	34
8.2	Release and Replacement of Bonds, Guaranties, etc	34
8.3	Title Matters	34
8.4	Tax Matters	36
8.5	Casualty or Condemnation	38
8.6	Further Assurances	40
8.7	Post-Closing Preservation of Books and Records	40

ARTICLE IX CONDITIONS TO CLOSE 41

9.1 Conditions to Obligations of Each Party 41

9.2 Conditions to Obligations of the Buyer 41

9.3 Conditions to Obligations of the Seller 42

ARTICLE X INDEMNIFICATION 43

10.1 Survival 43

10.2 Indemnification by Seller 43

10.3 Indemnification by Buyer 43

10.4 Certain Limitations 44

10.5 Indemnification Procedures 45

10.6 Tax Treatment of Indemnification Payments 47

10.7 Exclusive Remedies 47

ARTICLE XI TERMINATION 47

11.1 Termination 47

11.2 Effects of Termination 48

ARTICLE XII MISCELLANEOUS 48

12.1 Benefit and Assignment 48

12.2 Governing Law; Consent to Jurisdiction; Waiver of Jury Trial 48

12.3 Expenses 49

12.4 Notices 49

12.5 Counterparts 50

12.6 Amendment, Modification and Waiver 50

12.7 Entire Agreement 51

12.8 Publicity 51

12.9 Severability 51

12.10 Further Assurances 51

12.11 Time of the Essence 51

12.12 Enforcement of this Agreement 51

12.13 Third Party Beneficiaries 52

12.14 Interpretation 52

EXHIBITS:

Exhibit A – Definitions

Exhibit B – Inventory Procedures

Exhibit C – Employees

Exhibit D – Transition Services Agreement

Exhibit E-1 – Buyer’s Parent Guaranty

Exhibit E-2 – Seller Parent Guaranty

Exhibit F – CCS Note

Exhibit G – Ethanol Railcar Arrangement

ASSET PURCHASE AGREEMENT

THIS AGREEMENT is made this 11th day of December, 2020, (the "Effective Date") by and between Hereford Ethanol Partners, L.P., a Delaware limited partnership (the "Buyer"), and Green Plains Hereford LLC, a Delaware limited liability company ("Green Hereford"). Green Hereford is sometimes herein referred to individually as "Seller". Capitalized terms used herein have the meanings set forth in Exhibit A.

RECITALS

WHEREAS, Green Hereford owns an ethanol plant in Hereford TX (the "Hereford Plant"), the Hereford Plant also referred to as the "Ethanol Plant");

WHEREAS, Seller is engaged in the business of producing, marketing, and selling ethanol and its co-products, including, without limitation, distillers grains and corn oil from or out of the Ethanol Plant (the "Business");

WHEREAS, the Seller owns and uses certain real property and certain tangible and intangible assets used in the Business, including, without limitation, buildings and improvements, machinery and equipment, inventory, intellectual property, contract rights and prepaid expenses and receivables;

WHEREAS, the Buyer desires to purchase the Ethanol Plant and certain of the related assets and to assume certain liabilities associated with the Ethanol Plant, and the Seller desires to sell and transfer to the Buyer the Ethanol Plant and such related assets and liabilities, all as more fully set forth below;

WHEREAS, in order to induce Buyer to buy the Purchased Assets and Seller to sell the Purchased Assets, Green Plains Inc., an Iowa corporation and parent of Seller, and has executed and delivered the Seller Guaranty, and AgriAsset Holdings LLC, a Delaware limited liability company and parent of Buyer, has executed and delivered the Buyer Guaranty, on the date hereof; and

NOW, THEREFORE, in consideration of the foregoing recitals and the mutual agreements and covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Buyer and the Seller hereby agree as follows:

ARTICLE I
PURCHASE AND SALE

1.1 Purchase and Sale of Assets. Subject to the terms and conditions of this Agreement, and in reliance upon the representations, warranties, covenants and agreements made in this Agreement by the Seller and the Buyer, the Buyer shall purchase, accept and acquire from Seller free and clear of any Liens (other than Permitted Liens), and Seller shall sell, transfer, convey, assign and deliver to the Buyer, all of the assets and properties of Seller (but excluding the Excluded Assets) used or held in the conduct of or in connection with the Business, whether

tangible or intangible, real, personal or mixed, and wherever located (collectively, the "Purchased Assets"), including, without limitation, the following:

(a) All Inventories;

(b) Subject to any prorations as contemplated by Section 2.4, and/or the replacement of any guaranties as contemplated in Section 8.2, all prepaid expenses, advance payments, deposits and rights to receive discounts, refunds, rebates, awards and the like to the extent related to the Purchased Assets, the Ethanol Plan, the Business and the Assumed Contracts or Permits (collectively, the "Prepaid Expenses");

(c) Those Contracts of Seller related to the Ethanol Plant identified on Schedule 1.1(c) (collectively, the "Assumed Contracts");

(d) The real property described on Schedule 1.1(d) (the "Owned Land") and (i) all buildings, facilities, structures, warehouses, grain storage bins, silos, tanks, railroad tracks, scales, improvements, fixtures situated thereon (the "Owned Improvements"), and (ii) Seller's right, title and interest in and to all rights, privileges, easements, rights-of-way, appurtenances and other real property rights appurtenant or related thereto (collectively, the "Ancillary Real Property Rights", and together with the Owned Land and the Owned Improvements, the "Owned Real Estate");

(e) All of Seller's leasehold interest in and to any real property (as lessee or sublessee) leased or subleased as set forth in the Real Property Leases described on Schedule 1.1(e), including (i) all buildings, warehouses, grain storage bins, silos, tanks, railroad tracks, scales, improvements, fixtures situated on such leased or subleased property, and (ii) all Ancillary Real Property Rights appurtenant or related thereto (collectively, the "Leased Real Property");

(f) All equipment (building or office), machinery, tooling, dies, molds, patterns, stampings, prototypes, parts, components, projects in process, furniture, appliances, artwork, computers, computer terminals and printers, telephone systems, telecopiers and photocopiers, office supplies and office equipment, merchandise, supplies, accessories and other tangible personal property of every kind and description, which are owned or leased by the Seller, and utilized in connection with the operations of the Business, including, without limitation, those items listed on Schedule 1.1(f) attached hereto (collectively, the "Equipment");

(g) All Plant Specific Intellectual Property set forth on Schedule 1.1(g), all goodwill associated with respect thereto, licenses and sublicenses granted and obtained with respect thereto and rights thereunder, remedies against infringements thereof and rights to protection of interests therein under the Laws of all jurisdictions;

(h) All qualifications, registrations, filings, privileges, franchises, immunities, licenses, permits, authorizations and approvals of Governmental Authorities which are used or required in order for the Seller to own and/or operate the Business, including, without limitation, all certificates of occupancy and certificates, licenses and permits relating to zoning, building, housing, safety, Environmental Laws, fire and health (collectively, the "Permits");

(i) All Renewable Identification Numbers ("RINs") generated pursuant to the RFS Program from the Ethanol Plant's final product inventories and the RIN Pathway;

(j) All Records;

(k) All of the Seller's rights and remedies, under warranty or otherwise, against a manufacturer, vendor or other Person for any defects in any Purchased Asset;

(l) All deposits held by the Seller, if any, with respect to services to be performed or products to be delivered after the Closing relating to the Business;

(m) All other properties, assets and rights of every kind, character or description which are owned, used or held for use by Seller in connection with the Ethanol Plant and which are not Excluded Assets;

(n) The maintenance and capital spares, joints, valves, parts and tools owned by Seller or its Affiliates as of the Closing and located as of the Closing at the Ethanol Plant and used exclusively in connection with the Business (the "Spares"). Schedule 1.1(n) contains a list of the Spares as of December 8, 2020;

(o) All causes of action, choses in action and rights of recovery with respect to any of the foregoing; and

(p) All commercial and commodity Contracts entered into by the Seller or any Affiliate of Seller on market-based terms for (i) the purchase of corn to be used in the Ethanol Plant, and (ii) the sale of ethanol, corn oil, and distillers grains (dry, modified and wet) produced at the Ethanol Plant, which are listed on Schedule 1.1(p) attached hereto (collectively, "Commodity Contracts").

1.2 Excluded Assets. The Purchased Assets shall not include, and the Seller shall retain, the following assets (collectively, the "Excluded Assets"):

(a) All cash, cash equivalents and other marketable securities of Seller or any of its Affiliates;

(b) All accounts receivable from any Person and any notes receivable from any Person arising out of the operation of the Business prior to Closing, as well as all amounts, if any, that are receivable by Seller from its Affiliates;

(c) All of Seller's rights under the Contracts that are described and set forth on Schedule 1.2(c);

(d) All rolling stock except the railcars assigned or transferred pursuant to Section 6.13;

(e) All Intercompany Accounts;

(f) The Seller's rights under this Agreement and all Transaction Documents;

(g) The Seller's minute books, stock record books and corporate franchise, income and other Tax Returns;

(h) Rights and proceeds under any insurance policies;

(i) The name "Green Plains" and any derivatives thereof;

(j) All derivative contracts, hedging instruments and other similar futures contracts;

(k) The Seller's rights to claims for refunds for any Taxes (or portion thereof) ending on or before the Closing Date; and

(l) All Claims and/or recoveries with respect to the ADM and Syngenta class actions (ADM: Green Plains Trade Group LLC, et al., individually and on behalf of all others similarly situated, Plaintiffs vs. Archer Daniels Midland Company, Defendant. U.S. District Court for the District of Nebraska, Case No: 8:20-CV-00279) (Syngenta: In Re: Syngenta AG MIR162 Corn Litigation, U.S. District Court for the District of Kansas, MDL No.: 2591 Case No. 14-md-2591-JWL-JPO) (collectively, the "Syngenta/ADM Actions"); Seller shall indemnify the Buyer Indemnitees against, and shall hold the Buyer Indemnitees harmless from and against, any and all Losses incurred or sustained by, or imposed upon, the Buyer Indemnitees based upon, arising out of, with respect to or by reason of Claims arising with respect to such actions; such indemnification shall not be subject to the limitations set forth in Section 10.4.

1.3 Assumed Liabilities. Except for those Liabilities designated as Excluded Liabilities, Buyer shall assume and agree to pay, perform and discharge when due the following liabilities and obligations of Seller with respect to the Business (collectively, the "Assumed Liabilities"):

(a) all Liabilities under the Assumed Contracts with respect to periods commencing on and after the Closing Date;

(b) all Liabilities of Buyer and its Affiliates with respect to the Transferred Employees as provided in Exhibit C;

(c) all Liabilities of Buyer with respect to Transfer Taxes as provided in Section 8.4(a);

(d) All Liabilities of Buyer and its Affiliates related to the Green Shift License Agreement to the extent such Liabilities arise from the operation of the Ethanol Plant or the Business on or after the Closing Date; and

(e) all other Liabilities arising out of or relating to the ownership, operation or use of the Purchased Assets at any time from and after the Closing Date.

1.4 Excluded Liabilities. The parties acknowledge that the transactions contemplated by this Agreement involve a purchase and sale of assets, and that Buyer is not a legal successor of Seller and is assuming only the Assumed Liabilities and not any other Liabilities of the Seller or

any of its Affiliates of any nature whatsoever, whether known or unknown, absolute or contingent, and whether presently existing or hereafter arising. All such other liabilities and obligations shall be retained by and remain liabilities and obligations of the Seller and/or its Affiliates, as applicable (all such liabilities and obligations not expressly assumed by Buyer hereunder being herein referred to as the "Excluded Liabilities"). The Excluded Liabilities include:

(a) any Liabilities of the Seller for costs and expenses incurred (or to be incurred) for services performed by its legal, financial, accounting and investment banking advisors in connection with the transactions contemplated by this Agreement, including, without limitation, any broker's fees of Seller's broker;

(b) any Liabilities of the Seller relating to its performance under this Agreement and the Transaction Documents and the transactions contemplated hereby and thereby;

(c) any Liabilities of the Seller for Intercompany Accounts;

(d) any Liabilities of the Seller for asset retirement obligations related to railcars;

(e) except as expressly set forth in this Agreement, all Indebtedness, Contracts and Liabilities of any kind, character or description (whether known or unknown, accrued, absolute, contingent or otherwise) relating to or arising out of the ownership or operation of the Purchased Assets or the conduct of the Business prior to the Closing;

(f) all Liabilities of Seller or any of its Affiliates under the Assumed Contracts to the extent required to be paid or performed prior to Closing;

(g) all Liabilities arising out of or relating to or associated with the Excluded Assets;

(h) all Liabilities with respect to (i) Taxes of Seller (or any stockholder member, or Affiliate of Seller); (ii) Taxes relating to the Business, the Assets or the Assumed Liabilities for any Tax period (or portion thereof) ending on or before the Closing Date; (iii) Taxes that arise out of the consummation of the transactions contemplated hereby which constitute obligations of, and are payable by, the Seller, whether such Taxes arise by Law or as agreed to by the parties hereto under Section 8.4(a) or other provisions of this Agreement; or (iv) all Taxes attributable to any Tax period (or portion thereof) ending on or before the Closing Date of any Person imposed on Buyer as a transferee or successor, by contract or pursuant to any Law (including, but not limited to, Treasury Regulations Section 1.1502-6 or comparable federal, state, local or foreign Law) with respect to Liabilities or relationships existing on or prior to the Closing Date or by agreements entered into or transactions entered into on or prior to the Closing Date;

(i) all Liabilities of Seller and its Affiliates with respect to Employees as provided in Exhibit C;

(j) All Liabilities of the Seller and its Affiliates related to the Green Shift License Agreement to the extent such Liabilities arose from the operation of the Ethanol Plant or the Business prior to the Closing Date;

(k) All Liabilities of Seller and their respective Affiliates related to Syngenta/ADM Actions;

(l) All Liabilities associated with the matters described in that certain Consent Agreement and Final Order, Green Plains Inc., respondent, Environmental Protection Agency, complainant, EPA Docket Number EPCRA-06-2021-0500; and

(m) All Liabilities accruing, arising out of or related to the ownership, possession, use, operation or condition of the Purchased Assets, the Ethanol Plant or the Business before the Closing, including Liabilities for personal injury or death or damage to property of any Third Party attributable to or arising out of the ownership or operation of the Purchased Assets, the Ethanol Plant or the Business before the Closing and any liabilities and obligations, including any products liability for defective or off-spec Inventories sold to Third Parties prior to the Closing Date.

1.5 Assumed Contracts and Permits Not Assignable.

(a) To the extent that any Assumed Contract or Permit is not capable of being assigned, transferred or conveyed without the consent, waiver or authorization of a third person (including a governmental, regulatory or administrative authority), or if such assignment, transfer or conveyance or attempted assignment, transfer or conveyance would constitute a breach of any Assumed Contract or Permit, or a violation of any law, statute, decree, rule, regulation or other governmental edict, this Agreement shall not constitute an assignment, transfer or conveyance of such interest, or an attempted assignment, transfer or conveyance of such interest (such interests being hereinafter collectively referred to as "Restricted Interests"). The entire beneficial interest in any Assumed Contract or Permit subject to the restriction as described above, and any other interests in such Assumed Contract or Permit that is transferable notwithstanding such restriction, shall be transferred from the Seller to the Buyer as provided in this Section 1.5.

(b) Anything in this Agreement to the contrary notwithstanding, the Seller shall not be obligated to transfer to the Buyer any Restricted Interests without the Buyer or the Seller first having obtained all consents, waivers and authorizations necessary for such transfers. The Seller shall use commercially reasonable, good faith efforts to obtain such required consents, waivers and authorizations, and Buyer shall cooperate fully with Seller in all respects, to effect assignment thereof to Buyer as of the Closing Date; provided that in the event the Seller fails to obtain such consents, waivers or authorizations, or is unable because such assignment, transfer or conveyance constitutes a violation of any Law, then notwithstanding any other provision of this Agreement or any agreement, instrument or document contemplated hereby (the "Transaction Documents"), such failure or inability shall not constitute a breach or misrepresentation under this Agreement or any Transaction Document.

(c) To the extent that the consents, waivers and authorizations referred to in Section 1.5(a) hereof are not obtained by the Buyer or the Seller, or until the impracticalities of

transfer referred to therein are resolved, the Seller shall, at the request of Buyer and at Buyer's reasonable expense, (i) hold any Restricted Interests in trust for the use and benefit of Buyer, and shall enter into an arrangement with Buyer to provide Buyer with the benefits of any Restricted Interests, provided that Buyer shall perform Seller's obligations thereunder arising on and after the Closing Date until such Restricted Interest is assigned to Buyer or expires at the earliest opportunity in accordance with its terms, or is properly amended or supplemented, (ii) enforce, at the request of the Buyer for the account of the Buyer, any rights of the Seller arising from any Restricted Interests (including the right to elect to terminate in accordance with the terms thereof upon the request of the Buyer) and (iii) take all commercially reasonable and necessary actions required to assign to Buyer, or amend or supplement any such agreement, Assumed Contract, or Permit as soon as practicable after the Closing Date.

ARTICLE II
PURCHASE PRICE

2.1 Purchase Price. The aggregate purchase price (the "Purchase Price") for the Purchased Assets shall be:

(a) $39,000,000 (the "Base Purchase Price");

(b) plus the amount by which the Net Working Capital exceeds zero or minus the amount by which the Net Working Capital is less than zero, as determined pursuant to this Section 2.1(b) and Section 2.3. "Net Working Capital" means the result of (i) and (ii) below, all to be determined in accordance with GAAP, consistent with the past accounting methods, practices and procedures of the Seller; and

(i) the Inventory Value;

(ii) *plus* any amounts owed by Buyer to Seller with respect to earned and accrued vacation liabilities and bonus liabilities of Transferred Employees pursuant to Exhibit C and prorated Payables, as determined pursuant to Section 2.4*minus* any amounts owed by Seller to Buyer with respect to earned and accrued vacation liabilities and bonus liabilities of Transferred Employees pursuant to Exhibit C and prorated Payables, as determined pursuant to Section 2.4;

(c) plus an earn-out equal to the product of 27.5% times the amount earned from the carbon capture and sequestration ("CCS") credits earned from the Ethanol Plant under the low carbon fuel standard for the forty (40) quarters commencing upon: i) an executed agreement between Buyer and a joint venture partner on the CCS opportunity and ii) the restart of commercial operations following construction at the Hereford Plant (the "CCS Note"), payable and consistent with the terms of the CCS Note set forth as Exhibit F.

2.2 Closing Amount.

(a) The cash consideration to be paid by the Buyer for the Purchased Assets at the Closing (the "Closing Amount"), shall consist of:

(i) the Base Purchase Price;

(ii) plus or minus (as applicable) the Estimated Net Working Capital.

(b) Subject to the terms and conditions hereof, at the Closing the Buyer shall pay the Closing Amount by wire transfer of immediately available funds to such account or accounts designated in writing by the Seller.

2.3 Inventories and Net Working Capital Adjustment.

(a) Inventory Methodology. Seller and Buyer shall conduct a measurement of the actual amount of the Inventories as of the Closing Date in accordance with the measurement and valuation procedures and methodologies set forth on Exhibit B and shall value the Commodity Contracts as set forth on Exhibit B (collectively the "Inventory Methodology").

(b) Determination of Estimated Net Working Capital. At least three (3) Business Days prior to the Closing Date, Seller shall deliver to the Buyer a certificate executed by the Chief Financial Officer of the Seller or his designee attaching the Estimated Net Working Capital Statement and setting forth the Seller's best good faith estimate of the Estimated Net Working Capital (including the Estimated Inventory Value and the prorated amount of the Payables, as determined pursuant to Section 2.4) and the Closing Amount. The Estimated Net Working Capital Statement, the Estimated Net Working Capital calculation and the Closing Amount calculation shall be subject to review by the Buyer prior to the Closing.

(c) Determination of Net Working Capital.

(i) The Buyer shall, no later than thirty (30) days after the Closing Date, deliver to the Seller (x) the Closing Net Working Capital Statement and (y) a statement of the Buyer's calculation of the Closing Net Working Capital including the following: (a) the Final Inventory Value at Closing as determined in accordance with the Inventory Methodology; (b) a final proration amount for the Payables; and (c) Buyer's determination of all other Net Working Capital adjustments of the Seller at Closing (consisting of the other items of Net Working Capital not addressed by the Final Inventory Value or prorated amount of Payables (the "Other Closing Adjustments")) (the documents described in the foregoing clauses (x) and (y) being referred to as the "Net Working Capital Documents"). At the same time that the Buyer provides the Net Working Capital Documents to the Seller, the Buyer shall make the working papers and back-up materials used in preparing the Net Working Capital Documents (collectively, the "Buyer Backup Information") available to Seller and Seller's auditors at reasonable times and upon reasonable notice, and the Buyer shall promptly respond to any reasonable requests from the Seller for additional information. Further, the Seller and its representatives shall be entitled to make any and all copies and summaries of such Buyer Backup Information as the Seller may reasonably require. The Net Working Capital Documents shall be final and binding on the parties, and deemed accepted by the Seller, unless within thirty (30) days after the Seller's receipt thereof (the "Objection Period"), Seller provide the Buyer with written notice of objection with respect to the Net Working Capital Documents (a "Notice of Objection"). The Notice of Objection shall specify in reasonable detail each item of the Net Working

Capital Documents that the Seller disputes, the nature of any objection so asserted and any portions of the Net Working Capital Documents that the Seller does not dispute. The Buyer shall cooperate with the Seller and its representatives in their review of the Net Working Capital Documents and shall provide timely and reasonable access to any of its accountants, books, records, schedules, analyses, working papers and other information used in the preparation of the Net Working Capital Documents.

(ii) If the Seller timely submits a Notice of Objection, during the fifteen (15) day period following the date on which such Notice of Objection is received by the Buyer, the Buyer and the Seller shall meet in an effort to resolve any objections contained therein. If the Buyer and the Seller are unable to resolve the dispute within such fifteen (15) day period, then any disputed matter set forth in the Notice of Objection that remains unresolved shall be submitted for final determination to Deloitte or such other independent accounting firm of national repute agreed to by the Parties (the "Independent Accounting Firm"). The Independent Accounting Firm shall, based solely on the documents and presentations made by the Buyer and the Seller and within thirty (30) days after the disputed matters are submitted to it, render a written report as to the resolution of each disputed matter set forth in the Notice of Objection that remains unresolved, and as to the Closing Net Working Capital Statement and the calculation of the Closing Net Working Capital. The Independent Accounting Firm shall have exclusive jurisdiction over and the Independent Accounting Firm shall be the sole recourse and remedy of the parties against one another or any other Person with respect to any disputes arising out of or relating to the Closing Net Working Capital Statement and the calculation of the Closing Net Working Capital. The Independent Accounting Firm's determination shall be conclusive and binding on all parties and shall be enforceable in a court of law. The Independent Accounting Firm's fees and expenses shall be borne equally by the Buyer and the Seller.

(iii) For purposes of this Agreement, the final and binding Closing Net Working Capital Statement and Closing Net Working Capital shall be those set forth in the Net Working Capital Documents, after giving effect to any adjustments thereto agreed to by the Buyer and the Seller and to the resolution of any disputed matters by the Independent Accounting Firm pursuant to Section 2.3(c)(ii).

(d) Post-Closing Payment. Promptly (but not later than five (5) Business Days) after the final and binding determination of the Closing Net Working Capital as set forth in Section 2.3(c)(iii):

(i) if Closing Net Working Capital is less than the Estimated Net Working Capital, then the Purchase Price shall be reduced by the amount by which the Closing Net Working Capital is less than the Estimated Net Working Capital and the Seller shall pay by wire transfer to an account designated by the Buyer such amount.

(ii) if Closing Net Working Capital is greater than the Estimated Net Working Capital, then the Purchase Price shall be increased by the amount by which the Closing Net Working Capital is greater than the Estimated Net Working Capital and the Buyer shall pay by wire transfer to an account designated by the Seller such amount.

2.4 Prorations.

(a) Contractual Payments and Collections.

(i) all fees, rent, water, gas, electricity and other utilities; local business or other license fees, to the extent assigned; Property Taxes prorated pursuant to Section 8.4(b);, and other charges payable with respect to the Purchased Assets, including contractual payment obligations under the Assumed Contracts (collectively, the "Payables") shall be prorated between Seller, on the one hand, and Buyer, on the other hand, effective as of the Effective Time with Seller being responsible for all Payables related to the period prior to but excluding the Closing Date and Buyer being responsible for all Payables related to the period on and after the Closing Date. At Closing, the Net Working Capital shall be (A) increased by the pro-rated amount of all such Payables made by Seller prior to Closing that are attributable to Buyer's period of ownership of the Purchased Assets, and (B) decreased by an amount equal to the pro-rated amount of any such payment obligations assumed by Buyer that are attributable to Seller's period of ownership of the Purchased Assets. The parties shall use commercially reasonable efforts to cause utility meter readings to be determined as of the Effective Time or as close thereto as reasonably practicable; *provided, however*, that if a party's proration for a particular amount owed under this Section 2.4(a)(i) cannot be determined due to the unavailability of the necessary information on the appropriate invoice or remittance statement, then the proration shall be calculated on a per day basis using the number of days in the respective party's period of ownership of the Purchased Assets. In determining whether a payment to a third party pursuant to any Assumed Contract is attributable to Buyer's period of ownership or the Seller's period of ownership, the parties will allocate the burden of such payment in a manner that reflects the relative benefit of such work performed, services provided or goods delivered to each party; provided, however, there shall be a rebuttable presumption that any work performed, services provided or goods delivered prior to the Closing Date are for the benefit of Seller, and any work performed, services provided or goods delivered on or after the Closing Date are for the benefit of Buyer.

(ii) If Buyer receives any funds or other property that belongs to Seller, or vice versa, then the receiving party shall hold such funds and property in trust for the benefit of the rightful party and shall promptly forward such funds or property to the rightful party. It is the intention of the parties that Seller shall receive all income, rentals, fees and other revenues (including any under Assumed Contracts) attributable to Seller's period of ownership and operation of the Purchased Assets, and Buyer shall receive all income, rentals, fees and other

revenues (including any under Assumed Contracts) attributable to Buyer's period of ownership and operation of the Purchased Assets.

2.5 Purchase Price Allocation. As promptly as practicable, but not later than 90 days after the Closing Date, Buyer and Seller shall exchange their respective schedules allocating the Purchase Price (plus Assumed Liabilities, to the extent taken into account under Section 1060 of the Code) among the Purchased Assets in accordance with Section 1060 of the Code (as to each of Buyer and the Seller, the "Allocation"). Buyer and Seller will make reasonable efforts to agree their respective Allocations for purposes of the preparation, filing and audit of any Tax Return (including the filing for Form 8594); *provided, however*, nothing in this Agreement shall require Buyer and Seller to agree to a common Allocation.

ARTICLE III
CLOSING

3.1 Closing. The consummation of the transactions contemplated by this Agreement (the "Closing") shall take place (a) at the offices of Green Plains Inc., in Omaha, Nebraska, or (b) remotely by exchange of documents and signatures (or their electronic counterparts), in either case unless another place is agreed to in writing by the parties to this Agreement, at 10:00 a.m., local time, on the second Business Day after all of the conditions to Closing set forth in Article IX are either satisfied or waived (other than conditions which, by their nature, are to be satisfied on the Closing Date), or at such other time, date or place as the Seller and the Buyer may mutually agree upon in writing. The date on which the Closing is to occur is herein referred to as the "Closing Date". The Closing shall be deemed effective as of 12:01 a.m. Central Time on the Closing Date (the "Effective Time").

3.2 Closing Deliverables.

(a) At the Closing, the Seller shall deliver to the Buyer the following:

(i) one or more bills of sale in a customary form reasonably acceptable to the Buyer and duly executed by the Seller, transferring the tangible personal property included in the Purchased Assets to the Buyer;

(ii) one or more assignment and assumption agreements in a customary form reasonably acceptable to the Buyer (the "Assignment and Assumption Agreement") and duly executed by the Seller, effecting the assignment to and assumption by the Buyer of the intangible Purchased Assets and the Assumed Contracts;

(iii) with respect to each parcel of Owned Real Estate, a special warranty deed in a customary recordable form reasonably acceptable to the Buyer and duly executed and notarized by the Seller;

(iv) with respect to the Intellectual Property included in the Purchased Assets, one or more intellectual property assignment agreements in a customary form reasonably acceptable to the Buyer and duly executed by the Seller;

(v) the Seller Closing Certificate;

(vi) the certificate of the Secretary or Assistant Secretary of the Seller required by Section 9.2(d);

(vii) the FIRPTA Certificate;

(viii) such other customary instruments of transfer, assumption, filings or documents, in form and substance reasonably satisfactory to the Buyer, as may be required to give effect to this Agreement;

(ix) a duly executed counterpart to the Transition Services Agreement substantially in the form of Exhibit D (the "Transition Services Agreement");

(x) the Seller Guaranty; and

(xi) such other documents, affidavits or instruments as may be reasonably required by the Title Company in order to cause the Title Company to issue the Title Policy for the Real Estate.

(b) At the Closing, the Buyer shall deliver to the Seller the following:

(i) The Closing Amount by wire transfer of immediately available funds to an account or accounts designated in writing by the Seller to the Buyer no later than two (2) Business Days prior to the Closing Date;

(ii) the Assignment and Assumption Agreement duly executed by Buyer;

(iii) the Buyer Closing Certificate;

(iv) the certificate of the Secretary or Assistant Secretary of Buyer required by Section 8.3(c);

(v) a duly executed counterpart to the Transition Services Agreement;

(vi) the Buyer Guaranty;

(vii) the CCS Note, duly executed by the Buyer; and

(viii) such other customary instruments of transfer, assumption, filings or documents, in form and substance reasonably satisfactory to the Seller, as may be required to give effect to this Agreement.

ARTICLE IV
REPRESENTATIONS AND WARRANTIES OF THE SELLER

The following representations and warranties are subject to the information specifically set forth in this Agreement and in the relevant Schedules. Any information disclosed in the Schedules

pursuant to any Section of this Agreement shall be deemed to have been disclosed by Seller for purposes of each other Section of this Agreement to which such disclosure is relevant to the extent that such information is reasonably apparent on its face to be applicable to such other Section. Certain information reflected in the Schedules are not matters required by this Agreement to be disclosed and such disclosure does not imply that such information is material or would have a material adverse effect on the Seller (or set any standard of what constitutes materiality or a material adverse effect) or that such information is responsive to the representations or warranties. Seller hereby represents and warrants to the Buyer that the following statements are true and correct as of the Effective Date and shall be true and correct as of the Closing Date:

4.1 Organization and Qualification. Seller is duly organized and validly existing under the laws of the jurisdiction of its formation. Seller has the limited liability company power to own its properties and to carry on its business as now being conducted. Seller is duly qualified to transact business as a foreign entity and is in good standing in each jurisdiction (other than the jurisdiction in which it is organized) in which it carries on its business or owns, leases or subleases property, except where the failure to be so qualified or in good standing would not individually or in the aggregate have a material adverse effect on the Seller. Schedule 4.1 contains a true and complete list of each jurisdiction in which Seller is qualified to transact business.

4.2 Subsidiaries; Investments. Seller does not have any Subsidiaries. Except as set forth on Schedule 4.2, Seller does not have any direct or indirect ownership, equity or voting interest in any Person or Control of any Person.

4.3 Due Authorization; No Conflicts; Consents.

(a) Enforceability; Authority. This Agreement has been duly executed and delivered by Seller and, assuming the due authorization, execution and delivery of this Agreement by the other party hereto, this Agreement constitutes the valid and binding obligation of Seller enforceable against Seller in accordance with its terms, subject to bankruptcy, insolvency, reorganization and other laws affecting creditors generally and by general principles of equity (whether in a proceeding at law or in equity). Each Transaction Document executed by Seller as of the date hereof has been, and each Transaction Document to be executed by Seller will be upon execution, duly executed and delivered by Seller, and assuming the due authorization, execution and delivery of each such Transaction Document by the other party or parties thereto, each such Transaction Document is, or upon execution and delivery by Seller will be, the valid and binding obligation of Seller enforceable against Seller in accordance with its terms, subject to bankruptcy, insolvency, reorganization and other laws affecting creditors generally and by general principles of equity (whether in a proceeding at law or in equity). Seller has the requisite corporate or limited liability company power and authority to execute and deliver this Agreement and the Transaction Documents to which it is a party and to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution and delivery of this Agreement and the applicable Transaction Documents by the Seller and the consummation by Seller of the transactions contemplated hereby and thereby have been duly authorized by all necessary limited liability company action on the part of Seller.

(b) No Conflicts. The execution, delivery and performance by Seller of this Agreement and the other Transaction Documents to which it is a party, and the consummation of

the transactions contemplated hereby and thereby, do not and will not: (i) result in a violation or breach of any provision of the articles of organization or operating agreement of Seller; (ii) result in a violation or breach of any provision of any Law or Order applicable to Seller or the Purchased Assets; (iii) except as set forth in Schedule 4.3(b), require the consent, notice or other action by any Person under, conflict with, result in a violation or breach of, constitute a default under or result in the acceleration of any Material Contract; except in the case of clause (iii), where the violation, breach, conflict, default, acceleration or failure to give notice would not reasonably be expected to materially impede or delay the Closing or the ability of Seller to fulfill its obligations hereunder or under the other transaction documents or the Closing; (iv) trigger the right of any Person to acquire all or any part of the Purchased Assets or any interest or rights therein; or (v) result in the creation or imposition of any Lien on any of the Purchased Assets, except for Permitted Liens.

(c) Consents. No consent, approval, Permit, Order, declaration or filing with, or notice to, any Governmental Authority is required by or with respect to Seller in connection with the execution and delivery of this Agreement or any of the other Transaction Documents and the consummation of the transactions contemplated hereby and thereby, except for such as may be required under the RFS Program related to the transfer of the RIN Pathway.

4.4 Title to Assets. The Seller Group has, and immediately prior to the Closing the Seller will have, good and valid title to the tangible personal property, other than leased personal property, included in the Purchased Assets, free and clear of all Liens, except for Permitted Liens. Schedule 1.1(f) lists all assets comprising the Ethanol Plant as of the Effective Date, other than the Excluded Assets. At the Effective Time, Seller will convey to Buyer and Buyer will then acquire, good, marketable and valid title to or valid and subsisting leasehold interests in, all of the Purchased Assets, free and clear of all Liens (other than Permitted Liens and Liens that will be discharged by Seller on or prior to the Closing).

4.5 Real Property; Availability of Assets; Leases.

(a) Good Title. Schedule 1.1(d) and Schedule 1.1(e), respectively, identify all of the Owned Land and Leased Real Property owned or leased by the Seller Group and used or held for use in the operation of the Business. The Seller Group owns, and immediately prior to the Closing the Seller will own the Owned Real Estate, free and clear of any and all Liens, except for Permitted Liens. With respect to each Real Property Lease pursuant to which a member of the Seller Group is a lessee or sublessee, the Seller Group owns and immediately prior to the Closing, the Seller will own the lessee's interests in all the Leased Real Property described in such Real Property Lease, free and clear of any and all Liens, except for Permitted Liens. Except as set forth on Schedule 4.5(a), Seller has not granted any oral or written right to any person to lease, sublease, license or otherwise use or occupy any of the Owned Land or Leased Real Property. There are no pending or, to the Knowledge of Seller, threatened condemnation actions affecting the Owned Land. Subject to any minor differences that may be reflected in a metes and bounds survey, the legal descriptions for each parcel of Owned Land contained in the deed therefor describe such Owned Land correctly in all material respects. Seller has delivered true, complete and correct copies of all leases of Leased Real Property to Buyer.

(b) Condition. The use and operation of the Real Estate by the Seller materially conforms to all applicable building, zoning, safety, and other laws, statutes, ordinances, rules, regulations, codes, licenses, Permits, and all other restrictions and conditions. The Seller has not received written notice from any Governmental Authority relating to (i) violations of building, zoning, safety and fire ordinances or regulations which are not remedied or uncorrected; (ii) claims of any material defect or deficiency with respect to any of such properties which are not remedied or uncorrected; or (iii) requests for the performance of any repairs, alterations or other work reasonably expected to cost more than $100,000 in any single instance or $250,000 in the aggregate of all such instances to the Real Estate, other than any which the Seller has remedied or corrected. To the Knowledge of Seller, Seller's use and operation of the Real Estate is in compliance with, and Seller has obtained, all Permits and approvals required by each Governmental Authority with jurisdiction over the Real Estate and Seller.

(c) Availability of Assets. Except as set forth in Schedule 4.5(c), the Real Estate together with other assets owned, leased or subleased by the Seller constitute all the material assets and properties used in, or necessary for, the operation of the Business and are in good condition (subject to normal wear and tear) and serviceable condition and are suitable for the uses for which intended.

(d) Leases. To the Knowledge of Seller, (i) Seller is not in default or breach under any Real Property Lease and no other party thereto is in default or breach under any Real Property Lease, except in each case for such defaults or breaches that would not, individually or in the aggregate, reasonably be expected to have a material adverse effect; and (ii) there are no claims affecting any such Real Property Lease of which Seller has received written notice that would reasonably be expected to have, individually or in the aggregate, a material adverse effect.

(e) Utilities. Except as set forth on Schedule 4.5(e), (i) all water, gas, electric, drainage and other utility facilities serving the Real Estate are operational and are connected to public utility lines and located within lands dedicated to the public use or, in the case of private wells and septic systems, the same are on land owned or leased pursuant to a lease by Seller which is an Assumed Contract or within prior and indefeasible recorded easements for such purpose, (ii) such utility services are adequate (including as to capacity) for the use and operation of the Ethanol Plant as presently used and operated, (iii) water currently available for use at the Ethanol Plant is adequate in quantity and quality for the use and operation of the Ethanol Plant as presently used and operated, (iv) no other utility facilities are necessary to operate the Ethanol Plant as it is currently operated, and (v) no fees, connection charges or assessments are due and payable for the installation, operation or use of any sewer, drainage, water runoff or dry well facilities at the Real Estate.

4.6 Intentionally Deleted.

4.7 Inventories. The Inventories of the Seller consist of a quality and quantity that are usable and salable at normal profit margins and within customary time periods in the Ordinary Course of Business, contain no amount of slow-moving, obsolete or damaged items or materials in excess of reserves set forth on Schedule 4.7, and are owned free and clear of Liens other than Permitted Liens. None of the Inventories have been consigned to others, nor are any inventories consigned to Seller. Except as set forth in Schedule 4.7, no Inventory of Seller is located at a

location other than the Real Estate or with a common carrier in transit to or from a vendor or customer, and no Inventory of another Person is located on the Real Estate.

4.8 Intellectual Property.

(a) Schedule 4.8 sets forth a complete and accurate list of all Plant Specific Intellectual Property as well as any other Intellectual Property owned or purported to be owned by the Seller and used in the Business. Seller owns all right, title and interest in all Plant Specific Intellectual Property that is not licensed pursuant to an Assumed Contract. Seller owns or has a defensible right to use all Plant Specific Intellectual Property described in Schedule 4.8, but Buyer acknowledges that Seller's defensible right to use certain Intellectual Property and know-how material other than the Plant Specific Intellectual Property to conduct the Business as it is currently conducted by Seller is based in part upon licenses granted to Seller set forth in the Excluded Contracts listed in Schedule 1.2(c), which licenses are not transferred as part of this Agreement, and Seller makes no representation or warranty that Buyer can use any Intellectual Property other than the Plant Specific Intellectual Property without the licenses granted to Seller set forth in the Excluded Contracts listed in Schedule 1.2(c). Except for claims received by the Seller that resulted in licenses referenced in the Excluded Contracts set forth in Schedule 1.2(c), Seller has not received written notice that its right to use the know-how and trade secrets material and other Intellectual Property used in the Business to conduct the Business as it is currently conducted is not valid or infringes any third party's Intellectual Property or rights. To the Seller's Knowledge, no use or possession by the Seller of any Plant Specific Intellectual Property or the operation of the Business has infringed or does infringe the Intellectual Property or other rights of any party or constitute unfair competition. The Plant Specific Intellectual Property used by the Seller, along with the Intellectual Property licensed to Seller in the Excluded Contracts set forth in Schedule 1.2(c), is sufficient Intellectual Property for the operation of the Business as it is currently conducted. To the extent Seller uses Plant Specific Intellectual Property licensed from a third party in the operation of the Business as it is currently conducted, Seller has used reasonable, good faith efforts, which efforts may include, but are not limited to, seeking warranties of ownership or the right to license or provide such Plant Specific Intellectual Property, or an indemnification by such third party against infringement arising from the possession or use of such licensed Plant Specific Intellectual Property by Seller, to obtain verification that the party providing or licensing such Plant Specific Intellectual Property has the right to so provide or license such Plant Specific Intellectual Property. The Seller complies in all material respects with the terms, conditions and obligations contained in any Contracts or licenses conveying or granting the Seller rights to use, modify, sell or license Plant Specific Intellectual Property. To the Seller's Knowledge, no actions by any third party infringe upon any of the Seller-owned Plant Specific Intellectual Property described in Schedule 1.1(g). The Plant Specific Intellectual Property will be available for use by Buyer and its Affiliates immediately after the Closing Date on the same terms as those under which the Seller owned or used the Plant Specific Intellectual Property prior to the Closing Date and without requiring any additional payment or consideration by Buyer.

(b) All applicable fees, royalties and payments relating to the Plant Specific Intellectual Property due and payable by Seller or its Affiliates to any licensors of such Plant Specific Intellectual Property have been paid (and are not in any grace or extension period).

(c) Schedule 4.8 sets forth a complete and accurate list and summary description of all Net Names registered with a domain name registrar. To the Seller's Knowledge, no Net Name has been or is now involved in any dispute, opposition, invalidation or cancellation proceeding and no such action is threatened with respect to any Net Name.

(d) The Seller owns or has a valid and defensible right to use the manuals, policies, procedures, customer lists, personal information or other data, information and documents that are material to or used in the operation of the Business as it is currently conducted.

4.9 Material Contracts and Other Descriptions and Lists. Schedules 4.9(a) – (b) identify the following:

(a) Contracts. For purposes of this Agreement, a "Material Contract" means, with respect to the Business, all of the Assumed Contracts as well as any of the following:

(i) any Contract for the purchase of services, materials, supplies or equipment that involved the payment of more than $250,000 annually with respect to such Contract where performance has not been completed;

(ii) any Contract for the sale of goods or services that involved payment of more than $250,000 annually with respect to such Contract where performance has not been completed;

(iii) any distributor, dealer, sales agency or consultant Contract that involves the payment of more than $250,000 in 2020 or beyond December 31, 2020 and that is not otherwise described in another subsection of this Section 4.9(a);

(iv) any Contract for a term greater than one year and which cannot be cancelled by a Seller or its Affiliates upon sixty (60) days or less notice without penalty or liability of any kind;

(v) any guarantee by a Seller of the obligations of customers, suppliers, officers, directors, employees, Affiliates or other Persons;

(vi) any Contract under which Seller has agreed to indemnify any third Person with respect to, or to share, a Liability relating to Taxes of any third Person;

(vii) any lease or similar agreement under which (i) Seller is lessee of, or holds or uses, any machinery, equipment or other tangible personal property owned by any third Person for an annual rent in excess of $100,000 or (ii) the Seller is the lessor of, or makes available for use by any third Person, any tangible personal property it owns for an annual rent in excess of $100,000;

(viii) any Contract with any Governmental Authority that involves the payment of more than $100,000 annually with respect to such Contracts where performance has not been completed;

(ix) any Contract relating to the acquisition or disposition of any business (whether by merger, sale of stock, sale of assets or otherwise) pursuant to which any material obligations of Seller remains outstanding;

(x) all leases, subleases and licenses of real property and other agreements for or relating to the use and/or occupancy of real property, subordination and non-disturbance agreements and estoppel certificates) currently in effect;

(xi) any partnership, joint venture or other similar agreement or arrangement;

(xii) any Contract that grants a right of first refusal, first or last look, right of first offer, preemption right or any similar right with respect to any of the Purchased Assets, the Ethanol Plant or the Business;

(xiii) any Contract, that is in the nature of an exclusive dealing contract, output contract or requirements contract; and

(xiv) any Contract not made in the Ordinary Course of Business which involves the payment of more than $250,000 in 2020 or beyond the Closing Date.

(b) Powers of Attorney. The names of all Persons holding powers of attorney from the Seller and a summary statement of the terms thereof.

4.10 Performance of Contracts, Etc.. Except as set forth in Schedule 4.10, none of the Seller or any of its Affiliates is in breach or violation of, or in default under, any Material Contract. To the Seller's Knowledge, all Material Contracts are currently in full force and effect and enforceable in accordance with their terms. To the Seller's Knowledge, all Material Contracts will continue in full force and effect after the execution and delivery of this Agreement and the consummation of the transactions contemplated by this Agreement, without breaching the terms thereof or resulting in the forfeiture or impairment of any rights thereunder and without the consent of any other Person, except as set forth in Schedule 4.3(b). To the Seller's Knowledge, the Seller or its Affiliates have fulfilled and performed in all material respects their respective obligations under each Material Contract and are not, and have not been alleged to be, in breach or violation of, or in default under, any Material Contract. To the Seller's Knowledge, the other parties to each Material Contract have fully complied in all material respects with their obligations thereunder and are not in material breach or violation thereof. The Seller is not currently renegotiating any Material Contract (except in the Ordinary Course of Business) or paying liquidated damages in lieu of performance thereunder. Complete and correct copies of each Material Contract have been made available to the Buyer by the Seller.

4.11 Litigation. Except as set forth on Schedule 4.11, there is no pending or, to the Seller's Knowledge, threatened Proceeding (i) by or against Seller or any of the assets owned or used by Seller; or (ii) that challenges the transaction contemplated by this Agreement and the Transaction Documents. To the Seller's Knowledge, no event has occurred or circumstance exists that (with or without notice or lapse of time) is reasonably likely to give rise to or serve as a basis for the commencement of any such Proceeding.

4.12 Compliance with Laws or Orders. Except as set forth in Schedule 4.12, neither the Seller nor its assets or business are the subject of or bound by any Order. Seller is in compliance in all material respects with all applicable Laws and Orders. To the Seller's Knowledge, no event has occurred or circumstance exists that is reasonably likely to constitute or result in a material violation of or material failure to comply with any term or requirement of any Laws or Orders.

4.13 Environmental Compliance.

(a) Compliance. Except as set forth in Schedule 4.13(a), to the Seller's Knowledge the Seller, Business, and the Purchased Assets are, and at all times in the past have been, in material compliance with all Environmental Laws. Seller has obtained all Permits that are necessary or required under Environmental Laws in connection with the operation of the Business, all such Permits are current and with respect to the operation of the Ethanol Plant prior to Closing, any applications to extend, renew and continue such Permits have been timely submitted to the Governmental Authority with jurisdiction. Seller, the Business, and the Ethanol Plant are in material compliance with such Permits. Since January 1, 2018, and except as set forth in Schedule 4.13(a), none of Seller, its Affiliates, the Business or the Ethanol Plant have received any notice, directive, violation report, Order or charge asserting any violation of any Environmental Law or violation of any Permit.

(b) Claims for Remediation or Harm. Except as set forth in Schedule 4.13(a), neither Seller nor any of its Affiliates have received from any Governmental Authority or any other Person any claim, demand, directive, Order or request to investigate, restore, repair, clean up or otherwise remediate, or to contribute to the costs of investigating, restoring, repairing, cleaning up or otherwise remediating the Real Estate, or for personal injury, death, or other harm alleged to be associated with, resulting from, or caused by the Business or the Ethanol Plant or any activities associated with the Ethanol Plant .

(c) No Releases. Except as set forth in Schedule 4.13(c), to the Seller's Knowledge, neither Seller nor any of its Affiliates, or anyone acting on their behalf, has disposed of, spilled, discharged, released or exposed any Person to any Environmental Materials, on, at, in or under the Real Estate.

(d) Documents. To the Seller's Knowledge, Seller has made available to Buyer true, correct and complete copies of all (i) environmental plans, reports, inspections, investigations, and studies associated with the operation of the Business and Ethanol Plant; (ii) environmental audits, reports, lab data, boring logs, tables, surveys, assessments, studies and investigations that have been undertaken with the Business or the Real Estate; (iii) Permits and other documents required by Environmental Laws; (iv) documents evidencing compliance with Environmental Laws; (v) communications to or from any Governmental Authority regarding environmental compliance and/or Environmental Liability of the Business or the Ethanol Plant; and (vi) actions made by any Governmental Authority or any Third Party regarding the operation of the Business and Ethanol Plant and any other Real Estate, including actions for personal injury and property damage, in each case, to the extent received, made, filed or undertaken during the pendency of Seller's ownership of the Ethanol Plant.

4.14 Taxes. Except as set forth in Schedule 4.14,

(a) All Tax Returns required to be filed by Seller or with respect to the Business or any Purchased Assets have been timely filed. All Tax Returns filed or required to be filed by Seller or with respect to the Business or any Purchased Assets are correct and complete in all material respects. Except as set forth in Schedule 4.14, such Tax Returns have been examined by the appropriate Governmental Authority or the period for assessment of the Taxes in respect of which each such Tax Return was required to be filed (taking into account all applicable extensions and waivers) has expired and all deficiencies asserted or assessments made as a result of any such examination have been paid in full. All Taxes due and owing (or claimed to be due and owing by a Governmental Authority) by Seller or its Affiliates with respect to the Business or the Purchased Assets have been timely paid. Neither Seller nor its Affiliates with respect to the Business or the Purchased Assets are currently the beneficiary of any extension of time within which to file any Tax Return. Neither Seller nor any of its Affiliates has received written notice that any claim is outstanding by a Governmental Authority in a jurisdiction where Seller or its Affiliates have never filed Tax Returns that the Seller or its Affiliates are or may be subject to taxation by that jurisdiction with respect to the Business. There are no liens for Taxes (other than Taxes not yet due and payable) upon any of the Purchased Assets or the Business.

(b) Seller has withheld and paid to the appropriate Governmental Authority all Taxes required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, member, or other third party.

(c) No Tax audits or administrative or judicial Tax proceedings are proposed or threatened, in writing, or are pending or being conducted with respect to the Seller or its Affiliates related to the Purchased Assets or the Business. Neither Seller nor any of its Affiliates have received within the last three (3) years from any Governmental Authority any (i) notice indicating an intent to open an audit or other review, (ii) request for information related to Tax matters, or (iii) notice of deficiency or proposed adjustment for any amount of Tax proposed, asserted, or assessed by such Governmental Authority against Seller or its Affiliates related to the Purchased Assets or the Business.

(d) Neither Seller nor any of its Affiliates has waived any statute of limitations in respect of Taxes or agreed to any extension of time with respect to a Tax assessment or deficiency, which waiver or extension is currently in effect related to the Purchased Assets or the Business.

(e) Neither Seller nor any of its Affiliates will have any liability under any Tax Sharing Arrangement or Tax indemnity arrangement on or after the Closing Date related to the Purchased Assets or the Business.

(f) Neither Seller nor any of its Affiliates has participated or engaged in any “listed transaction” within the meaning of Treasury Regulations Section 1.6011-4(b)(2) (and all predecessor regulations) or similar provision of Law.

4.15 Employee Benefit Plans.

(a) Schedule 4.15(a) contains a list of each Benefit Plan. Seller has made available to Buyer a true, correct and complete copy (or, to the extent no such copy exists, an accurate description) of the plan documents, summary plan descriptions, and any other material written communications from Seller to Employees for each Benefit Plan.

(b) Except as set forth in Schedule 4.15(b), each Benefit Plan and related trust complies with all applicable Laws (including ERISA and the Code) in all material respects. Each Benefit Plan that is intended to be qualified under Section 401(a) of the Code (a "Qualified Benefit Plan") has received a favorable determination letter from the Internal Revenue Service, or with respect to a prototype plan, can rely on an opinion letter from the Internal Revenue Service to the prototype plan sponsor, to the effect that such Qualified Benefit Plan is so qualified and that the plan and the trust related thereto are exempt from federal income Taxes under Sections 401(a) and 501(a), respectively, of the Code, and, to Seller's Knowledge, nothing has occurred that could reasonably be expected to cause the revocation of such determination letter from the Internal Revenue Service or the unavailability of reliance on such opinion letter from the Internal Revenue Service, as applicable.

(c) Buyer's acquisition of the Assets will not cause Buyer or any of its Affiliates to incur any liability under Title IV of ERISA or Section 412 of the Code.

4.16 Employee Relationships.

(a) Except as set forth in Schedule 4.16, no Employee is a party to any employment or other agreement that entitles him or her to compensation or other consideration (i) as a result of the consummation of the transactions contemplated by this Agreement or (ii) in consideration for such Employee's continuation of employment with Seller or its Affiliate for a specified period of time.

(b) To the Knowledge of Seller, no director, manager, officer, employee or independent contractor of Seller is a party to or bound by any agreement that (i) could adversely affect the performance of his or her duties for Buyer or with respect to the Business, (ii) could adversely affect the ability of Seller or (following the Closing) of Buyer to conduct the Business, or (iii) requires him or her to transfer, assign or disclose information concerning his or her work to anyone other than Seller.

(c) No labor organization (whether certified or not) represents or purports to represent any Employees for purposes of collective bargaining or their employment with Seller. The Seller has no Knowledge of any person or entity currently seeking, or having sought during the last five (5) years, the support of any of the Employees to designate a collective bargaining representative for any group of Employees. There is no current or threatened labor strike, dispute, slow-down or work stoppage against or involving the Seller or any Employees.

(d) Seller (i) is and has been in compliance with all applicable Laws that relate to employment, equal employment opportunity (including Laws prohibiting employment discrimination, harassment or retaliation), wages, hours, leaves, workers' compensation, disability, occupational safety and health, immigration, collective bargaining, other employment

terms and conditions and plant closings and layoffs (including the Worker Adjustment and Retraining Notification Act, 29 U.S.C. § 2101, et seq. ("WARN") and similar state and local Laws), and (ii) is not and has not been liable for any arrears of wages, other compensation or any Taxes or penalties for failure to comply with any of the foregoing.

(e) To the Seller's Knowledge, there is no material misrepresentation contained in any documentation provided by any employee of the Seller in connection with any immigration filings made with the U.S. Citizenship and Immigration Services or the U.S. Department of Labor. To the Seller's Knowledge, the Seller and its Affiliates have complied in all material respects with all regulations as they relate to immigration and/or the verification of immigration/employment status, all Employees have completed I-9 forms, and Seller has retained such forms in accordance with the requirements of applicable immigration Laws. The Seller and its Affiliates have complied with immigration and the labor Laws related to their employees and independent contractors performing services for the Seller or any of its Affiliates outside of the United States.

(f) To the Seller's Knowledge, all individuals characterized and treated by the Seller as consultants or contractors are properly treated as independent contractors under all applicable Laws pertaining to labor and employment and related to the ownership and operation of the Purchased Assets or the Business.

(g) All wages, severance, commissions, incentive pay and bonuses earned and payable to Employees and contractors for services performed on or prior to the Effective Date have been paid in full or will be paid as soon as reasonably practicable hereafter.

4.17 Events Subsequent to December 31, 2019. Except as set forth on Schedule 4.17, and except for the transactions contemplated by and related to this Agreement, since December 31, 2019, the Seller has conducted the Business in the ordinary course and in conformity with past practice and there has not been:

(a) any event, occurrence or development that has had or is reasonably likely to have a material adverse effect on Seller or the operation of the Business;

(b) any material damage, destruction, loss or claim, whether or not covered by insurance, or condemnation or other taking adversely affecting any material assets or the business, operations or financial condition of Seller, taken as a whole;

(c) any incurrence, assumption or guarantee of any Indebtedness for borrowed money except (A) unsecured current obligations and liabilities incurred in the ordinary course of business consistent with past practice, or (B) any Indebtedness to be retained by Seller as an Excluded Liability;

(d) any transaction or commitment made or any Contract entered into by Seller relating to the Purchased Assets (including the acquisition or disposition of any assets) or any relinquishment by Seller of any Contract or other right, in either case, other than transactions and commitments in the ordinary course of business consistent with past practices and those contemplated by this Agreement;

(e) any actual, pending or to the Knowledge of Seller, threatened change that could reasonably be expected to result in a material deterioration in the relationship with any material customer or supplier of the Ethanol Plant;

(f) the creation or other incurrence by Seller of any Lien on any Purchased Asset or any other asset relating to the Ethanol Plant other than Permitted Liens except as set forth in Schedule 4.17(f);

(g) any cancellation, suspension, delinquency or loss of any Permit;

(h) with respect to any Transferred Employee, any (i) establishment of any bonus, employment, severance, deferred compensation, retirement or other employee benefit plan (or any amendment, modification or termination to any such existing agreement), (ii) grant of any severance, change of control, retention or termination pay, or (iii) increase or change to the rate or nature of the compensation (including wages, salaries and bonuses) payable to any Transferred Employee, except as may be required by Law or existing Contracts or in connection with annual merit increases in the Ordinary Course of Business ;

(i) any receipt by Seller of any written notice of a material violation, Proceeding or Liability under Environmental Laws related to the Ethanol Plant or the Purchased Assets;

(j) any action taken (or omitted) or event or circumstance that if taken (or omitted) or occurring after the date hereof would violate Section 6.1 in any material respect; or

(k) any agreement to do any of the foregoing.

4.18 Brokerage. Except as described on Schedule 4.18, neither the Seller nor any Person on its behalf has incurred, or made commitments for, any brokerage, finders' or similar fee in connection with the transactions contemplated by this Agreement.

4.19 Insurance. Schedule 4.19 sets forth a list of all policies or binders of insurance maintained, owned or held by or for the benefit of Seller or the Business on the date hereof. Seller has complied with each such insurance policy and has not failed to give any notice or present any claim thereunder in a due and timely manner. Seller has not cancelled or received written notice of any material increase of the premiums with respect to or default, termination or cancellation of, such insurance without replacement thereof. During the two (2)-year period immediately preceding the Closing Date, there have not been any actions (other than health insurance claims, and workers' compensation claims in the nature and quantity, and for amounts, historically experienced in connection with the operation of the Ethanol Plant) under any of such policies relating to the operation of the Purchased Assets as to which any insurance carrier is denying liability or defending, questioning or disputing under a reservation of rights. Seller shall keep or cause such insurance or comparable insurance to be kept in full force and effect through the Closing Date.

4.20 Permits.

(a) To the Seller's Knowledge, the Seller owns, holds or possesses all material Permits from a Governmental Authority that are necessary to entitle the Seller to operate and conduct the Business substantially as currently conducted. Schedule 4.20(a) sets forth a list of all of the Permits. Complete and correct copies of all of the Permits have been made available to the Buyer by the Seller.

(b) To the Seller's Knowledge, the Seller has fulfilled and performed its obligations under each of the Permits, and no event has occurred or condition or state of facts exists that constitutes or, after notice or lapse of time or both, would constitute a breach or default under any such Permit or that permits or, after notice or lapse of time or both, would permit revocation or termination of any such Permit, or which might adversely affect the rights of a Seller under any such Permit. Except as set forth in Schedule 4.20(b), no written notice of cancellation, of default or of any dispute concerning any Permit, or of any event, condition or state of facts described in the preceding clause, has been received since January 1, 2020 by, or is known to, the Seller. To the Seller's Knowledge, each of the Permits is valid, subsisting and in full force and effect and will continue in full force and effect after the Closing.

4.21 All Necessary Assets. Except for the Excluded Assets, the Purchased Assets constitute all of the assets which are used in, and all of the assets which are necessary for, the conduct of the Business as presently conducted.

ARTICLE V
REPRESENTATIONS OF THE BUYER

Buyer represents and warrants to Seller as follows:

5.1 Organization and Qualification. The Buyer is a limited liability company duly organized and validly existing under the laws of the State of Delaware. The Buyer has the power to own its properties and to carry on its business as now being conducted. The Buyer is duly qualified to transact business as a foreign entity and is in good standing in each jurisdiction (other than the jurisdiction in which it is organized) in which it carries on its business or owns, leases or subleases property.

5.2 Due Authorization; No Conflicts; Consents.

(a) Enforceability; Authority. This Agreement has been duly executed and delivered by the Buyer and, assuming due authorization, execution and delivery of this Agreement by the other parties hereto, this Agreement constitutes the valid and binding obligation of the Buyer, enforceable against it in accordance with its terms, subject to bankruptcy, insolvency, reorganization and other laws affecting creditors generally and by general principles of equity (whether in a proceeding at law or in equity). Each Transaction Document executed by the Buyer as of the date hereof has been, and each Transaction Document to be executed by the Buyer will be upon execution and delivery, duly executed and delivered by the Buyer, and assuming the due authorization, execution and delivery of each such Transaction Document by the other party or parties thereto, each such Transaction Document is, or upon execution and delivery by the Buyer will be, the valid and binding obligation of the Buyer enforceable against the Buyer in accordance

with its terms, subject to bankruptcy, insolvency, reorganization and other laws affecting creditors generally and by general principles of equity (whether in a proceeding at law or in equity). The Buyer has the power and authority to execute and deliver this Agreement and the applicable Transaction Documents and to perform its obligations hereunder and thereunder. The execution and delivery of this Agreement and the applicable Transaction Documents by the Buyer, and the consummation by the Buyer of the transactions contemplated hereby and thereby, have been duly authorized by all necessary action on the part of the Buyer.

(b) No Conflict. The execution, delivery and performance by the Buyer of this Agreement and the other Transaction Documents to which it is a party, and the consummation of the transactions contemplated hereby and thereby, do not and will not: (i) result in a violation or breach of any provision of the articles of organization or operating agreement of the Buyer; (ii) result in a violation or breach of any provision of any Law or Order applicable to the Buyer; or (iii) require the consent, notice or other action by any Person under, conflict with, result in a violation or breach of, constitute a default under or result in the acceleration of any agreement to which the Buyer is a party, except in the cases of clauses (ii) and (iii), where the violation, breach, conflict, default, acceleration or failure to give notice would not have a material adverse effect on the Buyer's ability to consummate the transactions contemplated hereby.

(c) Consents. No consent, approval, Permit, Order, declaration or filing with, or notice to, any Governmental Authority is required by or with respect to the Buyer in connection with the execution and delivery of this Agreement and the other Transaction Documents and the consummation of the transactions contemplated hereby and thereby, except for such other consents, approvals, Permits, Orders, declarations, filings or notices which would not have a material adverse effect on the Buyer's ability to consummate the transactions contemplated hereby and thereby.

5.3 Brokerage. The Buyer has not incurred, or made commitments for, any brokerage, finders' or similar fee or commission in connection with this Agreement.

5.4 Financial Ability. The Buyer has, and will have on the Closing Date, sufficient cash on hand from the Buyer's or its Affiliates' immediately available internal funds or available under a currently established committed credit facility or unutilized lines of credit with financial institutions to pay the Closing Amount.

5.5 No Litigation. There are no Proceedings pending or, to the Buyer's Knowledge, threatened against the Buyer, or its properties or businesses, that could reasonably be expected to restrict the ability of the Buyer to consummate the transactions contemplated hereby and otherwise perform hereunder.

ARTICLE VI
COVENANTS OF THE SELLER

6.1 Conduct of Business Prior to Closing.

(a) From the date hereof until the Closing, except as set forth on Schedule 6.1(a), otherwise provided in this Agreement or consented to in writing by the Buyer (which consent shall not be unreasonably withheld or delayed), Seller shall (a) conduct its Business in

the Ordinary Course of Business in compliance with all applicable Laws; and (b) use commercially reasonable efforts to maintain and preserve intact its current Business organization, operations and franchise and to preserve the rights, franchises, goodwill and relationships of its employees, customers, lenders, suppliers, regulators and others having relationships with the Business. Without limiting the foregoing, from the date hereof until the Closing Date, Seller shall:

(i) preserve and maintain all Permits required for the conduct of the Business as currently conducted or the ownership and use of the Purchased Assets; timely file all reports, applications and other documents pertaining to the operation of the Ethanol Plant and the Purchased Assets that are required to be filed with any Governmental Authority; and at all times from the Effective Date to and including the Effective Time operate the Ethanol Plant and the Purchased Assets in all material respects in accordance with the Permits;

(ii) pay the debts, Taxes and other obligations of the Business when due;

(iii) maintain the properties and assets included in the Purchased Assets in the same condition as they were on the date of this Agreement, subject to reasonable wear and tear;

(iv) continue in full force and effect without modification all insurance policies, except as required by applicable Law;

(v) defend and protect the properties and assets included in the Purchased Assets from infringement or usurpation;

(vi) perform all of its obligations under all Material Contracts;

(vii) maintain the Records in accordance with past practice; and

(viii) comply in all material respects with all Laws and Orders applicable to the conduct of the Business or the ownership and use of the Purchased Assets.

(b) Except (i) as set forth in Schedule 6.1(b), (ii) as expressly provided in this Agreement, or (iii) as otherwise consented to in writing in advance by Buyer (which consent shall not be unreasonably withheld or delayed), from the Effective Date until the Closing, the Seller shall not, with respect to the Purchased Assets:

(i) acquire, whether by merger or consolidation, by purchasing an equity interest or assets, or license or lease, any assets, properties, rights or businesses from any Person which assets, properties, rights or businesses would be included in the Purchased Assets, other than acquisitions of inventory, parts, services, supplies, equipment and immaterial assets in the ordinary course of business consistent with past practice or as required under any Assumed Contracts;

(ii) (A) sell, assign, lease, transfer, license, or otherwise dispose of or relocate any Purchased Assets, except pursuant to the terms of any Assumed Contract or in the Ordinary Course of Business consistent with past practice, or (B)

mortgage, pledge or encumber any Purchased Assets, or create or suffer to exist any Lien (other than a Permitted Lien) thereupon;

(iii) enter into, terminate, amend or modify any Material Contract that is an Assumed Contract other than in the Ordinary Course of Business consistent with past practice;

(iv) enter into any agreement or arrangement that limits or otherwise restricts in any material respect the conduct of the Business or that could, after the Closing Date, limit or restrict in any material respect Buyer or any of its Affiliates, from engaging or competing in any line of business, in any location or with any Person.

(v) Except as set forth on Schedule 6.1(b), commencing any new capital projects or making any additional commitments for capital expenditures relating to the Business in excess of $200,000 in the aggregate costs unless Seller remains solely liable for any such costs and expenditures not fully paid by Closing;

(vi) institute or cause any increase in salaries or compensation or severance for the Employees, other than annual merit increases in the Ordinary Course of Business consistent with past practice, or increase, enhance or accelerate any rights or benefits under or enter into, amend, terminate or adopt any Benefit Plan for the Employees, other than as required by any such Benefit Plan or as required by applicable Laws; not enter into, renew or allow the renewal of or amend or modify any employment or consulting agreement or other Contract or arrangement with respect to the performance of personal services for any Employee without Buyer's prior written consent;

(vii) hire any new employees, agents or consultants without Buyer's prior written consent;

(viii) cease to operate the Ethanol Plant prior to Closing or materially reduce production at the Ethanol Plant prior to Closing, except to the extent that such actions are conducted in the ordinary course of business consistent with Seller's past practices, market conditions or as otherwise required by Law or resulting from a Casualty; or

(ix) agree or commit to do any of the foregoing.

6.2 No Control of Other Party's Business. Nothing contained in this Agreement shall give the Buyer, directly or indirectly, the right to control or direct the operations of the Business prior to the Effective Time. Prior to the Effective Time, the Seller shall exercise, consistent with the terms and conditions of this Agreement, complete control and supervision over the Business and its assets and operations.

6.3 Access to Information. From the date hereof until the Closing, upon reasonable notice and during normal business hours, the Seller shall afford the officers, employees, accountants, counsel, financial advisors, agents, consultants and other representatives of the Buyer

reasonable access to, and permit them to make such reasonable inspections as they may reasonably require of, such of its properties (including the right to conduct a Phase I Environmental Site Assessment), Contracts, books and records (including Tax records, Tax Returns and accounting records), officers, employees, customers and vendors as the Buyer may reasonably request, and the Seller shall furnish and cause the Seller Group, as applicable, to furnish, promptly to the Buyer all information concerning the Business as the Buyer may reasonably request, including copies of all permit applications for the Purchased Assets which may have been compiled and submitted by members of the Seller Group and information concerning the properties of the Business. The Seller shall only be required to provide such access and furnish such information to the extent that it would not violate applicable Laws. The Buyer will treat any such information in accordance with the provisions of the Confidentiality Agreement. With respect to the Spares, Buyer shall have the right prior to Closing, along with the Seller to inspect and verify the inventory of Spares to confirm it is accurate in all material respects.

6.4 Conditions and Closing. The Seller shall take all commercially reasonable actions necessary to cause the conditions set forth in Sections 9.1 and 9.2 to be satisfied and to consummate the transactions contemplated herein as soon as reasonably possible after the satisfaction thereof. Subject to the satisfaction of all other conditions at the Closing, the Seller shall execute and deliver (or cause to be executed and delivered) all agreements and documents relating to the Seller as set forth in Section 9.2. The Seller shall use its commercially reasonable, good faith efforts to not take any action, or enter into any transaction, that would cause any of the Seller's representations or warranties contained in this Agreement to be untrue or inaccurate or result in a breach of any covenant made by it in this Agreement.

6.5 Approvals and Consents of Third Parties. The Seller has indicated (i) on Schedule 4.3(b) Part 1, the consents that will be required to be obtained by the Seller from any Third Party (other than a Governmental Authority) prior to the Closing, (ii) on Schedule 4.3(b) Part 2, the consents that Seller will use reasonable, good faith efforts to obtain from any Third Party (other than a Governmental Authority) prior to the Closing (each, as so indicated, a "Required Consent"). Consistent with Section 1.5, the Seller shall use its reasonable, good faith efforts to obtain all Required Consents, in form and substance reasonably satisfactory to the Buyer, prior to the Closing and will cooperate with the Buyer to obtain any approvals and consents required to be obtained by the Buyer. Notwithstanding the foregoing, the Seller shall not make any agreement or understanding affecting the Purchased Assets as a condition for obtaining any Required Consent except with the prior written consent of the Buyer.

6.6 Notification of Changes. Seller will promptly advise the Buyer in writing of (i) any event occurring or not occurring subsequent to the date of this Agreement but before the Closing Date that is reasonably likely to (a) render any representation or warranty of the Seller contained in Article IV untrue or inaccurate in any material respect or (b) cause any covenant, condition or agreement of the Seller contained in this Agreement not to be complied with or satisfied in all material respects, (ii) any Proceeding that is threatened, brought, asserted or commenced against the Seller that would have been listed in Schedule 4.11 if such Proceeding had arisen prior to the date hereof, (iii) any notice or other communication from any Third Party alleging that the consent of such Third Party is or may be required in connection with the transactions contemplated by this Agreement; and (iv) any material default under any Material Contract or event that, with notice or lapse of time or both, would become such a default on or prior to the Closing Date.

6.7 Supplement to Disclosure Schedules. Until the seventh (7th) Business Day prior to the Closing, Seller shall have the right (but not the obligation) to supplement or amend the disclosure schedules relating to Article IV hereto solely with respect to any matter first arising after the Effective Date (each a "Schedule Supplement"). Any disclosure in any such Schedule Supplement shall not be deemed to have cured any inaccuracy in or breach of any representation or warranty contained in this Agreement, including for purposes of the indemnification or termination rights contained in this Agreement or of determining whether or not the conditions set forth in Section 9.2 have been satisfied; provided, however, that if Buyer has the right to, but does not elect to, terminate this Agreement within ten (10) Business Days of its receipt of such Schedule Supplement, then Buyer shall be deemed to have irrevocably waived any right to terminate this Agreement with respect to such matter and, further, shall have irrevocably waived its right to indemnification under Section 10.2 with respect to such supplement or amendment set forth in the Schedule Supplement.

6.8 Governmental Approvals. During the period prior to the Closing Date, the Seller shall use its commercially reasonable, good faith efforts and cooperate with the Buyer in attempting to obtain any consents and approvals of Governmental Authorities required to be obtained by them in order to permit the consummation of the transactions contemplated by this Agreement or to otherwise satisfy the conditions in Article IX; provided, that the Seller shall not make any agreement or understanding affecting the Purchased Assets as a condition for obtaining any such consents or approvals except with the prior written consent of the Buyer.

6.9 Release of Liens. The Seller shall on or prior to the Closing Date deliver to the Buyer such documents as are necessary to terminate and release all Liens on the Purchased Assets except for Permitted Liens, which documents shall be in form and substance acceptable to the Buyer and shall include without limitation, all documents necessary to terminate of record any such Liens.

6.10 Carve-Out Tracts. Schedule 6.10 sets forth a list of land, tanks and other improvements that Seller previously transferred or conveyed to one or more of Seller's Affiliates and are used in connection with or necessary for the operation of the Business (the "Carve-Out Tracts"). Prior to Closing, Seller agrees, at its sole cost and expense, to re-acquire good and marketable title to the Carve-Out Tracts free and clear of all Liens except for the Permitted Liens for use in the operation of the Business, and such Carve-Out Tracts shall be included in the Purchased Assets to be sold to Buyer hereunder.

6.11 Shipment of Stored Grain. Within 90 days following the Effective Date, Seller shall have sold and shipped all grain from the grain storage bins that is owned by Seller as of the Effective Date (the "Stored Grain"). Buyer will provide labor to load out the Stored Grain onto trucks and rail cars supplied by Seller in a good and workmanlike manner in compliance with applicable Laws and Orders and generally accepted industry standards.

(a) Buyer will not be responsible for the current or future quality or quantity of the Stored Grain. As the parties have agreed that the quality of the Stored Grain is all sample grade quality, Buyer will collect samples from each shipment from the facility, but will not be responsible for grading of any of the Stored Grain. Buyer will send samples of the Stored Grain to a grain grading facility of Seller's choice and expense. Buyer will permit Seller or its

designated consultant, contractor or subcontractor to be present to observe the removal of the Stored Grain. Seller shall assume, retain and be responsible for and pay and discharge any and all Liabilities arising from the removal and disposal of the Stored Grain as described herein. If equipment is required to remove the Stored Grain as provided herein, Seller shall be responsible for all expense involved in providing all equipment and all operating cost thereof. Buyer will load Stored Grain at the direction of Seller and will not be responsible for acquiring or coordinating any transportation for the Stored Grain, or any expense in connection therewith.

(b) All Stored Grain remaining at the Ethanol Plant at the end of 120 days after the Effective Date will be charged for storage at the rate of $0.005 per bushel per day and a load out fee of $0.15 per bushel. Seller will maintain content insurance on all Stored Grain at the facility. As Buyer is not a commercial grain company, it does not have a commercial grain license or commercial grain storage.

6.12 RFS Third Party Engineering Audit. Seller agrees to work with Buyer to complete the EPA requirement for a third party engineering audit using quality assurance plans due January 30, 2022 and covering the last three years of Seller's RIN generation and plant operating data. In addition, Seller agrees to certify to the data covering Seller's operations and RIN generation prior to Closing. If any RINs are found to be invalidly generated or otherwise need to be replaced, Seller shall be the responsible party for doing so at its sole cost and expense.

6.13 Rail Cars.

(a) Seller agrees to transfer or cause its Affiliates to transfer to Buyer up to the number and types of railcars listed in Schedule 6.13(a). These railcars are leased by Seller and/or its Affiliates pursuant to various railcar leases and agreements with respect thereto ("Rail Car Agreements"). Seller has provided to Buyer copies of the applicable Rail Car Agreements, along with the lease rates and other fees that the counterparty of each Rail Car Agreement is currently charging Seller or its applicable Affiliates for the railcars that are the subject of the Rail Car Agreements (the "Lease Rates"). Seller and Buyer further agree to the terms set forth in Exhibit G and Schedule 6.13(c).

(b) Beginning promptly after Closing, Seller will coordinate with Buyer to schedule railcars from Seller's or its Affiliates' fleet into the Ethanol Plant as needed in the ordinary course of business, and as such cars come into the Ethanol Plant they will be identified by Buyer as railcars to be assigned or subleased to Buyer ("Qualifying Rail Cars"), until such time as all Qualifying Rail Cars have been identified. Only railcars that are in serviceable condition when they arrive at the Ethanol Plant will be used as Qualifying Rail Cars. Seller and Buyer shall negotiate terms of an inspection program for the Qualifying Rail Cars such that a baseline condition for each car is documented and Buyer is not liable for any damage or mechanical failure conditions that existed prior to Closing. As Qualifying Rail Cars are identified, Seller or its appropriate Affiliates and Buyer shall deliver to the counterparty of each Rail Car Agreement covering such Qualifying Rail Cars a letter: (i) requesting the assignment of the Rail Car Agreement covering such Qualifying Rail Cars from Seller or its respective Affiliate to Buyer, or (ii) requesting the release of such Qualifying Rail Cars under the applicable Rail Car Agreement, and the further lease by such counterparty to Buyer of such Qualifying Rail Cars. Once a Qualifying Rail Car becomes fully assigned to the Buyer, it will become a "Buyer Rail

Car". Should the counterparty of any Rail Car Agreement refuse to consent to the assignment of Qualifying Railcars to Buyer, Seller will use reasonable efforts to provide substitute Qualifying Rail Cars. In no event shall Buyer or Seller be obligated to include Rail Cars for which the counterparty to the Rail Car Agreement seeks to modify the original terms so as to negatively impact either party.

(c) To account for any difference between fair market rates and Lease Rates Seller and Buyer agree to true-up (as part of the Net Working Capital adjustment in Section 2.3) the difference between (i) sum of the present values of the product of the monthly Lease Rate multiplied by the number of railcars that are Qualifying Rail Cars for each month remaining on the term of the Rail Car Agreement covering such Qualifying Rail Cars (the "Lease Charge"); and (ii) the sum of present values of the product of the applicable fair market rate listed on Schedule 6.13(c) for similarly situated railcars (the "Market Rates") multiplied by the number of railcars that are Qualifying Rail Cars for each month remaining on the term of the Rail Car Agreement covering such Qualifying Rail Cars (the "Market Charge"). If the Lease Charge is less than the Market Charge, Buyer shall pay to Seller the amount of the difference between the Lease Charge and the Market Charge as part of the Working Capital adjustment in Section 2.3(d) hereof. If the Lease Charge is greater than the Market Charge, Seller shall pay to Buyer the amount of the difference between the Lease Charge and the Market Charge as part of the Working Capital adjustment in Section 2.3(d) hereof. The annual discount rate to be used in determining the present value factor for the Market Charge and Lease Charge shall be equal to five percent (5%). The discount period for each monthly calculation will be from the middle of each month to the Closing Date.

(d) Until such time as the parties complete the paperwork and secure the necessary counterparty consents to complete the assignment of the Qualifying Rail Cars to the Buyer, Seller shall, or shall cause their Affiliates to, allow Buyer to use the Qualifying Rail Cars on a temporary subleased basis (the "Loaned Cars") such that, at any time, the total number and types of Buyer Rail Cars and Loaned Cars equals the number and types identified as Qualifying Rail Cars. Buyer shall reimburse Seller for all lease payments and other associated costs, payments or fees (including repair and maintenance costs) arising under the applicable Rail Car Agreements with respect to the use by Buyer of the related Loaned Cars. Buyer may elect to discontinue the use of any Loaned Car by written notice to Seller, in which case, upon return of such Loaned Car to Seller, Buyer shall no longer be responsible for any payments, costs or fees related thereto, and Seller shall not be responsible for providing a replacement Loaned Car. Buyer acknowledges and agrees that Seller may substitute other equivalent railcars for Loaned Cars, so long as the substituted railcars meet the criteria to be Qualifying Rail Cars. The parties hereto agree to (or to cause their applicable Affiliates to) work together in a commercially reasonable manner to manage the transition of the Loaned Cars hereunder. Buyer and Seller shall negotiate in good faith a sublease agreement that would further define terms of the Loaned Cars. Such sublease agreement may also account for the temporary use by Buyer of additional railcars that are not Qualifying Rail Cars.

(e) Notwithstanding anything contained herein to the contrary, Seller's sole obligations under this Agreement with respect to Required Consents necessary for the assignment to Buyer of the Qualifying Rail Cars shall be the delivery by Seller to the counterparties thereto of the letters described in Section 6.13(c) above and Seller's joinder in the execution of any

documentation reasonably and customarily required by the counterparties to effectuate or otherwise document such assignments. Without limiting the foregoing, Buyer acknowledges that Seller shall not be required to provide any guarantees or other credit enhancement that may be necessary in order for Buyer to secure the necessary consent for the assignment of the Rail Car Agreements or for Buyer to secure its own railcar leases. Buyer and Seller shall cooperatively endeavor to complete the assignment of all Qualifying Rail Cars (including any substitutes therefor made in accordance with the provisions of Section 6.13(b) as promptly as reasonably possible after Closing, but in all events within three (3) months after Closing. Seller shall not be obligated to provide any Loaned Cars more than six (6) months following Closing, unless and only to the extent that Buyers' failure to complete the assignment of all Qualifying Railcars (and substitutes therefor, as applicable) is the result of Seller's failure to comply with its obligations under this Section 6.13.

(f) Buyer shall indemnify, defend and hold harmless the Seller Indemnitees against any and all Losses arising from the use or misuse after the Closing by Buyer or its Affiliates of the Loaned Cars pursuant to this Section 6.13.

6.14 Confidentiality and Confidential Information. Each party will maintain the confidentiality of the terms of the transactions contemplated by this Agreement except that Buyer and Seller may disclose the terms hereof to their employees with a need to know and to their legal, accounting, financing or other advisors and potential or actual lenders and/or investors (provided such parties agree to maintain the confidentiality of such information). All Confidential Information (as defined below) disclosed by one party (or its employees, officers, agents or advisors) to another party (or its employees, officers, agents or advisors) shall be treated by the receiving party with the same degree of care, but not less than a reasonable degree of care, as the receiving party uses with respect to its own similar information to protect the Confidential Information of the disclosing party and to prevent any (a) use of Confidential Information that is not contemplated by this Agreement, (b) dissemination of Confidential Information to any employee of a receiving party without a need to know, (c) communication of Confidential Information to any third party (other than a receiving party's legal, accounting, financing or other advisors and its potential or actual lenders and/or investors) or (d) publication of Confidential Information. For purposes of this Agreement, "Confidential Information" is Trade Secrets; financial information and pricing; technical information, such as research, development, procedures, algorithms, data, designs and know-how; business information, such as strategies, operations, methods, planning, marketing interests and products; the terms of this Agreement or any modification or amendment thereto; and the proprietary or confidential information of any third party who may disclose such information to a receiving party. The receiving party of any Confidential Information will return or destroy (and confirm such destruction to the other party) all such data and information to the respective source promptly upon written request therefor in the event that this Agreement is terminated. This Section imposes no obligation upon a receiving party with respect to Confidential Information that (i) was rightfully and lawfully known to the receiving party, free of any obligation of confidentiality, as demonstrated by information in existence at the time of disclosure; (ii) was independently developed by the receiving party without relying on the disclosing party's Confidential Information; (iii) was part of the public domain or has entered the public domain through no action or inaction of the receiving party; (iv) was lawfully obtained by the receiving party from a third party not under any obligation of confidentiality; or (v) disclosed with the prior written approval of the disclosing party. If a

receiving party is required by a Governmental Authority to disclose Confidential Information, the receiving party agrees to give the disclosing party reasonable advance notice (unless prohibited by applicable Law) so that the disclosing party may contest the disclosure or seek a protective order. If, in the absence of a protective order, other legal remedy or the receipt of a waiver by the disclosing party, the receiving party or any of its representatives are nonetheless, in the opinion of the receiving party's legal counsel, legally compelled to disclose Confidential Information of the disclosing party or else stand liable for contempt or suffer other censure or penalty, the receiving party or its representative may, without liability hereunder, disclose only that portion of the Confidential Information which such counsel advises is legally required to be disclosed, provided that the receiving party exercises commercially reasonable efforts to preserve the confidentiality of the Confidential Information including, without limitation, by cooperating with the disclosing party (at the disclosing party's expense) to obtain an appropriate protective order or other reliable assurance that confidential treatment will be accorded the Confidential Information. Each party acknowledges that the damages for improper disclosure of Confidential Information may be irreparable; therefore, the injured party is entitled to seek equitable relief, including injunction and preliminary injunction, in addition to all other remedies available at Law or in equity. Insofar as any Confidential Information furnished to Buyer relates to the Ethanol Plant or the Purchased Assets, Buyer will be released from its obligations under this Section at the Effective Time, and thereafter Seller and its Affiliates shall no longer possess any rights in or use of such Confidential Information.

6.15 Exclusive Negotiations. For a period commencing on September 8, 2020, and ending on the earlier of (i) forty-five (45) days following the execution and delivery of the Letter of Intent by Seller, or (ii) the mutual termination of the Letter of Intent by the parties thereto as provided in paragraph 2.9 therein, Seller will negotiate exclusively and in good faith with Buyer in relation to the transactions described herein and will not, directly or indirectly, whether through any stakeholders, directors, officers, employees, affiliates, representatives or agents, or otherwise, encourage or solicit any inquiries or accept proposals by, or engage in any discussions or negotiations with, or furnish any non-public information to, any person regarding alternative transactions involving the Business.

ARTICLE VII
COVENANTS OF THE BUYER

The Buyer covenants and agrees with the Seller as follows:

7.1 Conditions and Closing. The Buyer shall take all commercially reasonable actions necessary to cause the conditions set forth in Section 9.1 and Section 9.3 to be satisfied and to consummate the transactions contemplated herein as soon as reasonably possible after the satisfaction thereof. Subject to the satisfaction of all other conditions at the Closing, the Buyer shall execute and deliver all agreements and documents relating to the Buyer as set forth in Section 9.3. The Buyer shall use its commercially reasonable efforts to not take any action, or enter into any transaction, that would cause any of its representations or warranties contained in this Agreement to be untrue or result in a breach of any covenant made by it in this Agreement.

7.2 Notification of Changes. The Buyer will promptly advise the Seller in writing of (i) any event occurring or not occurring subsequent to the date of this Agreement but before the

Closing Date that is reasonably likely to (a) render any representation or warranty of the Buyer contained in Article V of this Agreement untrue or inaccurate in any material respect or (b) cause any covenant, condition or agreement of the Buyer contained in this Agreement not to be complied with or satisfied in all material respects and (ii) any notice or other communication from any Third Party alleging that the consent of such Third Party is or may be required in connection with the transactions contemplated by this Agreement.

7.3 [Intentionally Deleted].

7.4 Governmental Approvals.

During the period prior to the Closing Date, the Buyer shall use its commercially reasonable efforts and cooperate with the Seller in attempting to obtain any consents and approvals of Governmental Authorities required to be obtained by them in order to permit the consummation of the transactions contemplated by this Agreement or to otherwise satisfy the conditions in Article IX.

7.5 Confidentiality. The Buyer acknowledges and agrees that the Confidentiality Agreement remains in full force and effect and, in addition, covenants and agrees to keep confidential, in accordance with the provisions of the Confidentiality Agreement, information provided to the Buyer pursuant to this Agreement. If this Agreement is, for any reason, terminated prior to the Closing, the Confidentiality Agreement and the provisions of this Section 7.5 shall nonetheless continue in full force and effect.

ARTICLE VIII
COVENANTS AND AGREEMENTS OF SELLER AND BUYER

8.1 Employee Matters. Buyer and Seller agree to the provisions set forth in Exhibit C attached hereto related to employment matters.

8.2 Release and Replacement of Bonds, Guaranties, etc. Promptly following the Closing, the Buyer shall deliver, to the applicable beneficiary or counterparty, replacement or substitute guaranties, letters of credit, bonds, security deposits, and other surety obligations and evidence of financial capacity, in each case acceptable to the relevant beneficiary or counterparty in replacement of those credit support arrangements set forth in Schedule 8.2 (the “Credit Support Arrangements”). The Buyer shall use commercially reasonable efforts to cause the Seller and its Affiliates to be released, as of the Closing, from all obligations relating to the Credit Support Arrangements and any Liabilities related thereto, in form and substance reasonably acceptable to the Seller. Buyer shall indemnify, defend and hold harmless Seller in accordance with and subject to the limitations in Article 10 from any and all Losses relating to, resulting from, or arising out of, any Credit Support Arrangement to the extent any such Losses directly relate to, result from, or arise out of the use of the Purchased Assets or the operation of Business on or after the Closing Date.

8.3 Title Matters.

(a) Title Commitment and Survey. Seller shall (i) cause the Title Company to issue, within fifteen (15) days after the date of this Agreement, commitments (the “Title Commitments”) for one or more Title Policies to be issued by the Title Company with respect to

each parcel of Real Estate together with copies of all instruments identified therein as creating exceptions or title defects (the "Exceptions") and (ii) have prior the Effective Date delivered to Buyer copies of all existing surveys, plats and site plans of the Real Estate in Seller's possession (the "Existing Surveys"). Buyer shall have the right to within thirty (30) days following the Effective Date, at its sole cost and expense, to cause the Existing Surveys to be updated or obtain a new survey or surveys of the Real Estate (the "Updated Survey" and together with the Existing Surveys, the "Survey").

(b) Title Review. Buyer shall have the right to make objections ("Title Objections") to any Exception or any reservation, easement, covenant, exception, limitation, restriction or other defect shown on the Updated Survey or reflected in the Title Commitment, such Title Objections to be made in writing and delivered to Seller, the Title Company and Surveyor within ten (10) days following the latter of Buyer's receipt of the Title Commitments, the documents reflecting Exceptions, or the Updated Survey. Seller shall have the right, but not the obligation, to cure (or cause to be cured, including by way of express title insurance or its equivalent) any Exceptions constituting Title Objections, such cure to be effected not later than five (5) Business Days prior to the Closing Date (the "Cure Period"); provided, however, that in the event a mortgage, deed of trust or other similar monetary lien secured by the Real Estate and placed on the Real Estate by or at the request of a Seller or an Affiliate of Seller (collectively a "Mortgage Lien") affects all or any portion of the Seller's interest in the Real Estate, on or before Closing, Seller shall cause all such Mortgage Liens to be satisfied in a manner which is sufficient to cause them to no longer affect title to the Real Estate, and the Real Estate shall be conveyed free and clear of all such Mortgage Liens, and such Mortgage Liens shall in no event constitute, or be deemed to constitute, a Permitted Lien. If Seller elects not to, fail, or is unable for any other reason to cure any Exceptions constituting Title Objections during the Cure Period, Buyer shall have the right, within five (5) days following the expiration of the Cure Period and as Buyer's sole and exclusive remedy in such event, to either (i) waive in writing its Title Objections with respect to such Exceptions, or (ii) terminate this Agreement by written notice to Seller, it being understood that the scheduled Closing Date shall be extended by five (5) days (or the lesser number of days until Buyer waives the Title Objections, if applicable) to accommodate Buyer's election. If Buyer fails to terminate this Agreement in accordance with clause (ii) of the immediately preceding sentence within the required time period or otherwise consummates the Closing, then Buyer shall be deemed to have waived all Title Objections which have not, as of such time, been cured, and all Exceptions forming the basis for such uncured Title Objections shall become Permitted Liens.

(c) Each Title Policy shall insure good and marketable fee simple title to the Real Property for an amount determined by Buyer in its reasonable discretion (subject to any limitations imposed on the Title Company by applicable Law and underwriting requirements) but subject to Permitted Liens, the Exceptions and the standard printed exceptions in the promulgated Title Policy form. Provided that Seller and its Affiliates will not thereby incur any Liabilities that are not otherwise expressly set forth in the other provisions of this Agreement, Seller agrees to reasonably cooperate with Buyer in executing any documents reasonably requested by the Title Company which may be necessary to issue the Title Policies, including providing any factually true affidavit reasonably requested by the Title Company or Buyer to evidence the payment or satisfaction of any Liens, the absence of unrecorded leases and parties in possession, the absence of work that could give rise to mechanics' or materialmens' or similar lien claims, the absence of

option or other agreements that could form the basis of an encumbrance or similar rights against the subject property, to evidence the payment of any Taxes affecting the Real Property, or to evidence the satisfaction of any other matter which Buyer may be required to establish in order to obtain the Title Policy or any endorsement thereto in form satisfactory to Buyer. The cost and expense of procuring and issuing the Title Commitments and the Title Policy shall be borne 50% by Buyer and 50% by Seller.

8.4 Tax Matters.

(a) Sales and Use Taxes. Seller and Buyer agree that all state and local sales and use Taxes relating to the sale and conveyance of the Purchased Assets shall be the Liability of Buyer, and shall be borne by Buyer as follows:

(i) At Closing, Seller shall not collect from Buyer any state and local sales and use Taxes. Rather, Buyer shall remit such Taxes directly to the appropriate Governmental Authorities when such Taxes are due and owing and Buyer shall provide proof of payment to Seller.

(ii) Promptly following Closing, Buyer shall provide Seller with an appropriate exemption certificate to establish the right to any exemption from state and local sales and use Taxes and for any exemptions from any other applicable state Tax. Buyer shall thereafter provide Seller with any additional exemption certificates and other documentation as may be required by the Governmental Authorities for such purpose. Seller shall reasonably cooperate with Buyer, including providing Buyer with reasonable access to Seller's books, records and such other data as Buyer may reasonably request in order to support all applicable sales Tax exemptions, subject to the Confidentiality Agreement.

(iii) If any exemption claimed by Buyer is subsequently denied by any Governmental Authority, and as a result a Seller is assessed additional sales or use Taxes, then Buyer shall remit such Taxes directly to the appropriate Governmental Authorities, or, in the event such Taxes are remitted by Seller, Buyer shall reimburse Seller, or their assignees, for such assessed Taxes, including interest and penalty.

(b) Property Taxes. All real property, personal property, ad valorem and other similar Taxes assessed on any of the Purchased Assets ("Property Taxes") in the Tax Period in which the Closing Date occurs shall be prorated between Buyer and Seller based on the number of days of such Tax Period before the Closing Date (the "Pre-Closing Tax Period") and the number of days in such Tax Period on and after the Closing Date (the "Post-Closing Tax Period"). Seller shall be liable for the proportionate amount of such prorated Property Taxes that is attributable to the Pre-Closing Tax Period, and Buyer shall be liable for the proportionate amount of such prorated Property Taxes that is attributable to the Post-Closing Tax Period. At Closing, the Purchase Price shall be (i) increased by the amount, if any, of any such Property Taxes prepaid by Seller with respect to a Post-Closing Tax Period, or (ii) decreased by the amount, if any, of any such Property Taxes relating to a Pre-Closing Tax Period which Buyer will be obligated to pay after Closing. If the Closing Date shall occur before the tax rate or assessment is fixed for

such Tax year, the apportionment of such Property Taxes and payments at the Closing shall be based upon the most recently ascertainable tax bills, with an adjustment being made between Seller and Buyer when such Property Taxes and the assessed valuation for the Tax year in which the Closing occurs are known. Seller shall file all required Tax Returns with respect to Property Taxes that become due and payable before the Closing Date in a manner consistent with prior practice, except as required by applicable Legal Requirement, and shall pay such Property Taxes on or before the due date therefor. Buyer shall file all Tax Returns incidental to such Property Taxes that become due and payable after Closing and shall pay such Property Taxes on or before the due date therefor. To the extent that the amount of any such Property Taxes paid by Buyer with respect to any Pre-Closing Tax Period exceeds the Purchase Price adjustment therefor, Seller shall reimburse Buyer for the difference within thirty (30) days of Seller's receipt of Buyer's invoice therefor, accompanied by reasonable supporting documentation (including copies of relevant Tax bills). Seller and Buyer shall reasonably cooperate with each other with respect to any Property Tax assessment or valuation (or protest in connection therewith) by any Governmental Authority with respect to the Tax periods in which the Closing Date occurs. If either party hereto receives a refund of any Property Taxes for which the other is liable or responsible under this Agreement, the party receiving such refund, whether received in cash, or as a credit against another state and/or local Tax, shall, within thirty (30) days after the receipt of such refund, remit it to the party who is liable.

(c) Tax Returns. Except as provided otherwise in this Agreement: (i) for any Pre-Closing Tax Period or to the portion of a Straddle Period that ends on the day before the Closing Date, Seller shall be responsible for timely filing of all Tax Returns required by applicable Law to be filed, and payment of all Taxes due, levied or imposed, in connection with the Purchased Assets, the Business, or Employees and independent contractors engaged in operating or maintaining the Purchased Assets or marketing products produced at the Ethanol Plant; (ii) for any Post-Closing Tax Period or to the portion of a Straddle Period that arises on or after the Closing Date, Buyer shall be responsible for the timely filing of all Tax Returns required by applicable Law to be filed, and payment of all such Taxes levied or imposed, in connection with the Purchased Assets, the Business, or employees and independent contractors engaged in operating or maintaining the Purchased Assets or marketing products produced at the Ethanol Plant; and (iii) control of any legal or administrative proceedings concerning any such Taxes with respect to the Purchased Assets shall rest with the party responsible for payment therefor under this Section 8.4(c).

(d) Refund and Tax Benefits.

(i) Any Tax refunds related to the Purchased Assets or Assumed Liabilities that are received by Buyer, and any amount credited against Taxes to which Buyer becomes entitled, that relate to Pre-Closing Tax Period or to the portion of a Straddle Period that ends on the day before the Closing Date shall be for the account of Seller, and Buyer shall pay over to Seller any such refund or the amount of any such credit within fifteen (15) days after receipt or entitlement thereto.

(ii) Any Tax refunds related to the Purchased Assets or Assumed Liabilities that are received by Seller, and any amount credited against Taxes to

which Seller become entitled, that relate to any Post-Closing Tax Period or to the portion of a Straddle Period that arises on or after the Closing Date shall be for the account of Buyer, and Seller shall pay over to Buyer any such refund or the amount of any such credit within fifteen (15) days after receipt or entitlement thereto.

(e) Cooperation. With respect to any Taxes related to the Purchased Assets, Buyer and Seller agree (i) to furnish or cause to be furnished to each other, upon request, as promptly as applicable, such information and assistance as is reasonably necessary for the computation of any such Taxes or the filing of any applicable Tax Return, the making of any election, or the preparation for or conduct of any audit, examination, or other proceeding by any Governmental Authority, (ii) to furnish each other with copies of any notices from any Governmental Authority that might affect the liability of the other party for Taxes, (iii) to cooperate with each other in the conduct of any audit, examination, or other proceeding, and (iv) that no compromise or settlement of any item from a Tax audit or proceeding which potentially affects the other party shall be agreed upon without prior written consent of the other party, such consent not to be unreasonably withheld.

(f) Tax Treatment. Buyer and Seller agree, for U.S. federal income Tax purposes, to treat the transactions contemplated by this Agreement as a purchase of the assets of the Seller by Buyer and will take no actions inconsistent with such treatment. Notwithstanding anything in this Agreement to the contrary, Seller shall be responsible for Taxes on any gain resulting from the sale of the Purchased Assets to Buyer hereunder.

8.5 Casualty or Condemnation.

(a) Notice. In the event that, prior to the Closing Date, all or any portion of the Purchased Assets are damaged or destroyed in whole or in part (the portion of the Purchased Assets so damaged or destroyed, the "Damaged Portion"), whether by fire, theft, vandalism, flood, wind, explosion or other casualty (a "Casualty") or taken by condemnation or eminent domain or by agreement in lieu thereof with any Person or Governmental Authority authorized to exercise such rights (a "Taking"), Seller shall notify Buyer promptly in writing (a "Casualty Notice") of the Casualty or Taking. The Casualty Notice shall include: (i) a reasonable description of the facts and circumstances surrounding the Casualty or Taking; (ii) Seller's preliminary assessment of the effect of the Casualty or Taking on the Purchased Assets; and (iii) Seller's preliminary assessment of whether, and the extent to which, any losses sustained as a result of such Casualty or Taking are covered by one or more insurance policies (including property/casualty and workers' compensation policies) maintained immediately prior to the Closing by the Seller

(b) Repair or Replacement.

(i) In the event of a Casualty or Taking between the Effective Date and the Closing Date, Seller shall elect, at its option, to either (A) repair or replace or make adequate provision for the repair or replacement of the Damaged Portion of the Purchased Assets at Seller's cost prior to the Closing, in which case Buyer's obligation to effect the Closing shall not be affected, but the Closing Date (and the End Date, if necessary) shall be deferred until three (3) Business Days after repairs

or replacement have been completed and the Damaged Portion of the Purchased Assets is fully repaired or restored to the condition thereof immediately prior to such Casualty or Taking in accordance with applicable Laws or Orders, or (B) negotiate with Buyer to reduce the Purchase Price to reflect the cost to repair or replace the Damaged Portion of the Purchased Assets and the post-Closing loss of net income associated with such business interruption (such repair or replacement costs and loss of net income, the "Repair Costs"). Notwithstanding the foregoing, Seller's election in clause (A) of this Section 8.5(b)(i) shall be unavailable and clause (B) of this Section 8.5(b)(i) shall apply if the Damaged Portion of the Purchased Assets cannot reasonably be expected to be fully repaired or restored to the condition thereof immediately prior to such Casualty or Taking in accordance with applicable Laws or Orders on or before the date that is 180 days following the occurrence of the Casualty or Taking (the "Casualty Event Termination Date")

(ii) If Seller and Buyer agree on the Repair Costs within fifteen (15) days of Buyer's receipt of Seller's notice of the Casualty or Taking (the "Repair Negotiation Period"), Buyer's obligation to effect the Closing shall not be affected, but the Purchase Price shall be reduced by the Repair Costs so agreed.

(iii) If Seller and Buyer do not agree on the Repair Costs within the Repair Negotiation Period (a "Repair Cost Dispute"), Buyer or Seller may request an engineering company (and/or other appropriate specialist) that shall be mutually agreed to by Buyer and Seller to evaluate the Damaged Portion of the Purchased Assets and the loss of net income associated with such business interruption and deliver to Buyer and Seller its written estimate of the Repair Costs (the "Third-Party Estimate") within fifteen (15) days after the end of the Repair Negotiation Period. If the Third-Party Estimate is less than the Buyer Casualty Threshold (or greater than the Buyer Casualty Threshold or Seller Casualty Threshold, as applicable, and neither party terminates the Agreement as permitted pursuant to Section 8.5(b)(iv)), Buyer's obligation to effect the Closing shall not be affected and Buyer and Seller shall mutually resolve the Repair Cost Dispute after the Closing in accordance with the provisions of Section 2.3 (and, for the avoidance of doubt, the engineering company or other appropriate specialist shall be deemed to be the Inspector for purposes of Section 2.3), with a post-Closing adjustment to the Purchase Price equal to the finally-determined Repair Costs.

(iv) Notwithstanding the foregoing, and subject to Section 8.5(f), if the Repair Costs as agreed to by Buyer and Seller or the Third-Party Estimate, as applicable, (A) is equal to or greater than the Buyer Casualty Threshold, Buyer may elect, by giving Seller written notice of election within fifteen (15) days of receipt of the Third-Party Estimate, or (B) is equal to or greater than the Seller Casualty Threshold, Seller may elect, by giving Buyer written notice of election within fifteen (15) days of receipt of the Third Party Estimate, to terminate this Agreement without further obligation hereunder, except as provided in Section 11.2.

(c) Condemnation Awards. In the event of any reduction in the Purchase Price in connection with a Taking of the Ethanol Plant, as provided in Section 8.5(a), Buyer shall be

entitled to collect from any condemnor the entire award(s) that may be made in any such proceeding, without deduction, to be paid out as follows: subject to actual receipt of such award(s) by Buyer, (a) Buyer shall pay to Seller all such amounts, up to the amount of such Purchase Price reduction, and (b) Buyer shall be entitled to retain the balance (if any) of such award(s). Seller shall not settle any condemnation or eminent domain proceeding relating to the Ethanol Plant without Buyer's prior consent (which consent shall not be unreasonably withheld, conditioned, or delayed).

(d) Purchase Price Adjustment. Any adjustment of the Purchase Price pursuant to Section 8.5(b) which is necessary to reflect a final determination of Repair Costs after the Closing shall be made as follows: (a) an adjustment in favor of Buyer shall be paid in cash by Seller; and (b) an adjustment in favor of Seller shall be paid in cash to the extent the Purchase Price had been reduced pursuant to this Section 8.5. Any such reduction, refund or payment shall be made within ten (10) Business Days after such final determination.

(e) Deferral of Closing Date and End Date. In the event of a Repair Cost Dispute, the Closing Date and the End Date shall be deferred until (a) three (3) Business Days after receipt of the Third-Party Estimate, or (b) if Seller elects the option in clause (A) of Section 8.5(b)(i), as provided therein, but in no event beyond the Casualty Event Termination Date.

8.6 Further Assurances. After the Closing, each party shall take such further actions and execute such further documents as may be reasonably necessary or reasonably requested by any other party in order to effectuate the intent of this Agreement and the Transaction Documents and to provide such other party with the intended benefits of this Agreement and the Transaction Documents.

8.7 Post-Closing Preservation of Books and Records. For a period of six (6) years following Closing (except as to Tax records for which the period shall be the applicable statute of limitations), (A) Buyer shall, and shall cause its Affiliates to, upon receipt of reasonable prior written request from Seller, to (i) afford to Seller and its Affiliates reasonable access during Buyer's normal business hours to the Records delivered to Buyer by Seller and to those Transferred Employees having knowledge of the location or contents of such Records; and (ii) provide Seller, at Seller's expense, with copies of the Records delivered to Buyer by Seller; all in respect of (1) financial reporting, (2) Tax or similar purposes, (3) addressing environmental matters involving the Ethanol Plant, including any certification or reporting obligations under the RFS Program, (4) Permits and permit applications, or (5) any audit, investigation, dispute or litigation or any other business purpose related to the Ethanol Plant or the Excluded Liabilities; and (B) Seller shall, and shall cause its Affiliates to, upon receipt of reasonable prior written request from Buyer, (i) afford to Buyer and its Affiliates reasonable access during Seller's normal business hours to Seller's or its respective Affiliate's books and Records related to the ownership or operation of the Ethanol Plant or the Assumed Liabilities and to Seller's or its Affiliates' employees having knowledge of the location or contents of such books and Records; and (ii) provide Buyer, at Buyer's expense, with copies of the book and Records related to the ownership or operation of the Ethanol Plant or the Assumed Liabilities; all in respect of (1) financial reporting, (2) Tax or similar purposes, (3) addressing environmental matters involving the Ethanol Plant, including any certification or reporting obligations under the RFS Program, (4) Permits and permit applications, or (5) any audit, investigation, dispute or litigation or any other business purpose related to the Ethanol Plant or the

Assumed Liabilities. No access provided hereunder shall unreasonably interfere with Seller's or Buyer's operation of their respective businesses. Notwithstanding anything to the contrary contained in this Agreement, (x) no Person shall be required to provide any information or access that such Person reasonably believes could violate applicable Law, including rules or regulations or the terms of any Contract or cause the waiver of attorney/client or similar privilege. Each party shall be entitled to recover from the other its out-of-pocket costs (including copying costs) incurred in providing such books and records or personnel to the other party. The requesting party will hold in confidence all confidential information identified as such by, and obtained from, the disclosing party or any of its Representatives, except as otherwise required by Law.

ARTICLE IX
CONDITIONS TO CLOSE

9.1 Conditions to Obligations of Each Party. The obligations of the Buyer and the Seller to consummate the transactions contemplated by this Agreement and the Transaction Documents are subject to the satisfaction (or waiver by the party entitled to the benefit thereof, if permissible under applicable Laws and Orders) of the following conditions:

(a) no restraining order, preliminary or permanent injunction or other order issued by any court of competent jurisdiction or other legal restraint or prohibition preventing, restraining, prohibiting or otherwise making illegal the consummation of the transactions shall have taken effect after the date hereof and shall still be in effect; and

(b) all required clearances, consents, approvals, and waiting periods applicable to the consummation of the transaction under the applicable Laws shall have been obtained or expired or been earlier terminated, as applicable.

9.2 Conditions to Obligations of the Buyer. The obligations of the Buyer to consummate the transactions contemplated by this Agreement and the Transaction Documents are subject to the satisfaction or, to the extent permitted by applicable Law, waiver of the following conditions at or prior to the Closing Date:

(a) Representations and Warranties; Covenants. Each of the representations and warranties of the Seller contained in this Agreement shall be true and correct as of the Closing Date as if made as of the Closing Date (or, to the extent such representations and warranties speak as of an earlier date, they shall be true and correct as of such earlier date), except where the failure of such representations and warranties to be true and correct would not have a material adverse effect on the Seller (it being understood that for purposes of this clause, the parties shall disregard any materiality qualifiers included in such representations and warranties). The Seller shall have performed and complied with all covenants hereunder that are required to be performed by it at or prior to the Closing Date in all material respects, including the acquisition of the Carve Out Tracts as set forth in Section 6.10.

(b) Required Consents. Each of the Required Consents set forth on Part 1 of Schedule 4.3(b) shall have been obtained.

(c) Closing Certificate. The Buyer shall have received a certificate, dated as of the Closing Date and signed by the Chief Executive Officer or Chief Financial Officer of Seller,

that each of the conditions set forth in Section 9.1(a) and Section 9.2(a) have been satisfied (the "Seller Closing Certificate");

(d) Secretary's Certificate. The Buyer shall have received a certificate of the Secretary or an Assistant Secretary (or equivalent officer) of Seller certifying (i) that attached thereto are true and complete copies of all resolutions adopted by the board of directors (or equivalent body) of Seller authorizing the execution, delivery and performance of this Agreement and the other Transaction Documents and the consummation of the transactions contemplated hereby and thereby, and that all such resolutions are in full force and effect and are all the resolutions adopted in connection with the transactions contemplated hereby and thereby, and (ii) the names and signatures of the officers of Seller authorized to sign this Agreement, the Transaction Documents and the other documents to be delivered hereunder and thereunder.

(e) FIRPTA Certificate. The Buyer shall have received a certificate pursuant to Treasury Regulations Section 1.1445-2(b) (the "FIRPTA Certificate") that the Seller is not a foreign person within the meaning of Section 1445 of the Code duly executed by Seller.

9.3 Conditions to Obligations of the Seller. The obligations of the Seller to consummate the transactions contemplated by this Agreement and the Transaction Documents are subject to the satisfaction or, to the extent permitted by applicable Law, waiver of the following conditions at or prior to the Closing Date:

(a) Representations and Warranties; Covenants. Each of the representations and warranties of the Buyer contained in this Agreement shall be true and correct as of the Closing Date as if made as of the Closing Date (or, to the extent such representations and warranties speak as of an earlier date, they shall be true and correct as of such earlier date), except where the failure of such representations and warranties to be true and correct would not have a material adverse effect on the Buyer's ability to consummate the transactions contemplated hereby (it being understood that for purposes of this clause, the parties shall disregard any materiality qualifiers included in such representations and warranties). The Buyer shall have performed and complied with all covenants hereunder that are required to be performed by it at or prior to the Closing Date in all material respects.

(b) Closing Certificate. The Seller shall have received a certificate, dated as of the Closing Date and signed by the Chief Executive Officer or Chief Financial Officer of the Buyer, that each of the conditions set forth in Section 9.3(a) have been satisfied (the "Buyer Closing Certificate").

(c) Secretary's Certificate. The Seller shall have received a certificate of the Secretary or an Assistant Secretary (or equivalent officer) of the Buyer certifying (i) that attached thereto are true and complete copies of all resolutions adopted by the board of directors (or equivalent body) of the Buyer authorizing the execution, delivery and performance of this Agreement and the other Transaction Documents and the consummation of the transactions contemplated hereby and thereby, and that all such resolutions are in full force and effect and are all the resolutions adopted in connection with the transactions contemplated hereby and thereby, and (ii) the names and signatures of the officers of the Buyer authorized to sign this Agreement, the Transaction Documents and the other documents to be delivered hereunder and thereunder.

ARTICLE X
INDEMNIFICATION

10.1 Survival. Subject to the limitations and other provisions of this Agreement, the respective representations, warranties, covenants and agreements of Seller and Buyer contained in this Agreement, shall (a) in the case of the representations and warranties, survive the Closing Date for a period of twelve (12) months after the Closing Date upon restart of the Hereford Plant but shall not exceed fourteen (14) months after the Closing Date under any circumstances, except that the Fundamental Warranties shall survive the Closing and remain in full force and effect for a period of two (2) years after the Closing Date, (b) in the case of any of the parties' respective covenants and agreements which contain other express survival periods or contemplate future performance or obligations, such covenants and agreements survive the Closing Date for the period provided in accordance with their express terms or until fully performed, (c) in the case of all covenants and agreements not covered by the immediately preceding clause, such covenants and agreements shall survive the Closing Date for a period of twelve (12) months after the Closing Date upon restart of the Hereford Plant but shall not exceed fourteen (14) months after the Closing Date under any circumstances *provided that*, notwithstanding anything to the contrary in this Agreement, no Claim can be asserted by Buyer against a Seller arising out of or related to a breach of the pre-closing covenants or agreements of a Seller set forth in Section 6.1 after the one (1) year anniversary of the Closing Date. Notwithstanding the foregoing, any claims asserted in good faith with reasonable specificity (to the extent known at such time) and in writing by notice from the non-breaching party to the breaching party prior to the expiration date of the applicable survival period shall not thereafter be barred by the expiration of such survival period and such claims shall survive until finally resolved.

10.2 Indemnification by Seller. Subject to the other terms and conditions of this Article X, if the Closing occurs, Seller shall indemnify the Buyer Indemnitees against, and shall hold the Buyer Indemnitees harmless from and against, any and all Losses incurred or sustained by, or imposed upon, the Buyer Indemnitees based upon, arising out of, with respect to or by reason of:

(a) any inaccuracy in or breach of any of the representations or warranties of Seller contained in this Agreement;

(b) any breach or non-fulfillment of any covenant, agreement or obligation to be performed by Seller pursuant to this Agreement;

(c) any Excluded Asset or any Excluded Liability; or

(d) any Liability arising out of the ownership or operation of the Ethanol Plant prior to the Effective Time (other than the Assumed Liabilities).

10.3 Indemnification by Buyer. Subject to the other terms and conditions of this Article X, if the Closing occurs, Buyer shall indemnify the Seller Indemnitees against, and shall hold the Seller Indemnitees harmless from and against, any and all Losses incurred or sustained by, or imposed upon, the Seller Indemnitees based upon, arising out of, with respect to or by reason of:

(a) any inaccuracy in or breach of any of the representations or warranties of Buyer contained in this Agreement;

(b) any breach or non-fulfillment of any covenant, agreement or obligation to be performed by Buyer pursuant to this Agreement; or

(c) any Assumed Liability; or

(d) any Liability arising out of the ownership or operation of the Ethanol Plant on or after the Effective Time (other than the Assumed Liabilities) .

10.4 Certain Limitations. The party making a claim under this Article X is referred to as the "Indemnified Party" and the party against whom such claims are asserted under this Article X is referred to as the "Indemnifying Party". The indemnification provided for in Section 10.2 and Section 10.3 shall be subject to the following limitations:

(a) The Indemnifying Party shall not be liable to the Indemnified Party for indemnification under Section 10.2(a) or Section 10.3(a), as the case may be, until the aggregate amount of all Losses in respect of indemnification under Section 10.2(a) or Section 10.3(a) exceeds two percent (2.0)% of the Base Purchase Price (the "Deductible"), in which event the Indemnifying Party shall only be required to pay or be liable for Losses in excess of the Deductible.

(b) Subject always to Section 10.4(c), the aggregate amount of all Losses for which an Indemnifying Party shall be liable pursuant to Section 10.2(a) or Section 10.3(a), as the case may be, shall not exceed (i) ten percent (10.0%) of the Base Purchase Price other than with respect to Losses related to any breach of Seller's Fundamental Warranties, or (ii) fifteen percent (15.0%) of the Base Purchase Price related to any breach of Seller's Fundamental Warranties (the "Overall Cap").

(c) Payments by an Indemnifying Party pursuant to Section 10.2 or Section 10.3 in respect of any Loss shall be limited to the amount of any liability or damage that remains after deducting therefrom any insurance proceeds actually received by the Indemnified Party under applicable non-affiliated insurance policies and any indemnity, contribution or other similar payment actually received by the Indemnified Party in respect of any such claim, net of any expenses related to the receipt of such proceeds, including retrospective premium adjustments, if any. The parties shall use commercially reasonable efforts to mitigate any Losses arising out of or relating to this Agreement or the transactions contemplated hereby, provided, that an Indemnified Party shall have no obligation to make a claim for recovery against any insurer of such Indemnified Party with respect to any such Losses.

(d) Payments by an Indemnifying Party pursuant to Section 10.2 or Section 10.3 in respect of any Loss shall be reduced by an amount equal to any Tax benefit recognized and realized as a result of such Loss by the Indemnified Party (reduced by any tax detriments related to the loss or the right to indemnification) (based solely on the Indemnified Party's good faith determination and calculation, acting reasonably).

(e) In no event shall any Indemnifying Party be liable to any Indemnified Party for any punitive, incidental, consequential, special or indirect damages, including loss of future revenue or income, loss of business reputation or opportunity relating to the breach or alleged breach of this Agreement, or diminution of value or any damages based on any type of multiple

except, however, with respect to any of the foregoing paid or owing to a Third Party with respect to a Third Party Claim, which damages shall be considered part of damages and shall be covered by the indemnifications set forth in this Article X.

(f) Each Indemnified Party shall take, and cause its Affiliates to take, all reasonable steps to mitigate any Loss for which such Indemnified Party seeks indemnification under this Agreement upon becoming aware of any event or circumstance that would be reasonably expected to, or does, give rise thereto, including incurring costs only to the minimum extent necessary to remedy the breach that gives rise to such Loss.

(g) Seller shall not be liable under Section 10.2(a) for any Losses based upon or arising out of any inaccuracy in or breach of any of the representations or warranties of Seller contained in this Agreement if Buyer had Knowledge of such inaccuracy or breach prior to the Closing.

(h) No Losses may be claimed under Section 10.2 or Section 10.3 by any Indemnified Party to the extent such Losses are included in the calculation of any adjustment to the Purchase Price pursuant to Article II.

(i) Notwithstanding anything in this Agreement to the contrary, solely for purposes of this Article X, in determining the existence of an inaccuracy in or a breach of any representation, warranty, covenant or agreement and in determining the amount of Losses, no effect shall be given to any qualification as to materiality or material adverse effect.

10.5 Indemnification Procedures.

(a) Third Party Claims. If any Indemnified Party receives notice of the assertion or commencement of any action, suit, claim or other legal proceeding made or brought by any Person who is not a party to this Agreement or an Affiliate of a party to this Agreement or a Representative of the foregoing (a "Third Party Claim") against such Indemnified Party with respect to which the Indemnifying Party is obligated to provide indemnification under this Agreement, the Indemnified Party shall give the Indemnifying Party prompt written notice thereof. The failure to give such prompt written notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits rights or defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Third Party Claim in reasonable detail, shall include copies of all material written evidence thereof and shall indicate the estimated amount, if reasonably practicable, of the Loss that has been or may be sustained by the Indemnified Party. The Indemnifying Party shall have the right to participate in, or by giving written notice to the Indemnified Party, to assume the defense of any Third Party Claim at the Indemnifying Party's expense and by the Indemnifying Party's own counsel, and the Indemnified Party shall cooperate in good faith in such defense. In the event that the Indemnifying Party assumes the defense of any Third Party Claim, subject to Section 10.5(b), it shall have the right to take such action as it deems necessary to avoid, dispute, defend, appeal or make counterclaims pertaining to any such Third Party Claim in the name and on behalf of the Indemnified Party. The Indemnified Party shall have the right, at its own cost and expense, to participate in the defense of any Third Party Claim with counsel selected by it, subject to the Indemnifying Party's right to control the defense thereof. If

the Indemnifying Party elects not to compromise or defend such Third Party Claim or fails to promptly notify the Indemnified Party in writing of its election to defend as provided in this Agreement, the Indemnified Party may, subject to Section 10.5(b), pay, compromise, defend such Third Party Claim and seek indemnification for any and all Losses based upon, arising from or relating to such Third Party Claim. Seller and Buyer shall cooperate with each other in all reasonable respects in connection with the defense of any Third Party Claim, including making available (subject to the provisions of Section 6.10) records relating to such Third Party Claim and furnishing, without expense (other than reimbursement of actual out-of-pocket expenses) to the defending party, management employees of the non-defending party as may be reasonably necessary for the preparation of the defense of such Third Party Claim.

(b) Settlement of Third Party Claims. Notwithstanding any other provision of this Agreement, the Indemnifying Party shall not enter into settlement of any Third Party Claim without the prior written consent of the Indemnified Party (which consent shall not be unreasonably withheld or delayed), except as provided in this Section 10.5(b). If a firm offer is made to settle a Third Party Claim without leading to liability or the creation of a financial or other obligation on the part of the Indemnified Party and provides, in customary form, for the unconditional release of each Indemnified Party from all liabilities and obligations in connection with such Third Party Claim and the Indemnifying Party desires to accept and agree to such offer, the Indemnifying Party shall give written notice to that effect to the Indemnified Party. If the Indemnified Party fails to consent to such firm offer within ten (10) days after its receipt of such notice, the Indemnified Party may continue to contest or defend such Third Party Claim and in such event, the maximum liability of the Indemnifying Party as to such Third Party Claim shall not exceed the amount of such settlement offer. If the Indemnified Party fails to consent to such firm offer and also fails to assume defense of such Third Party Claim, the Indemnifying Party may settle the Third Party Claim upon the terms set forth in such firm offer to settle such Third Party Claim. If the Indemnified Party has assumed the defense pursuant to Section 10.5(a), it shall not agree to any settlement without the written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

(c) Direct Claims. Any claim by an Indemnified Party on account of a Loss which does not result from a Third Party Claim (a "Direct Claim") shall be asserted by the Indemnified Party giving the Indemnifying Party prompt written notice thereof. The failure to give such prompt written notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits rights or defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Direct Claim in reasonable detail, shall include copies of all material written evidence thereof and shall indicate the estimated amount, if reasonably practicable, of the Loss that has been or may be sustained by the Indemnified Party. The Indemnifying Party shall have thirty (30) days after its receipt of such notice to respond in writing to such Direct Claim. During such thirty (30)-day period, the Indemnified Party shall allow the Indemnifying Party and its professional advisors to investigate the matter or circumstance alleged to give rise to the Direct Claim, and whether and to what extent any amount is payable in respect of the Direct Claim and the Indemnified Party shall assist the Indemnifying Party's investigation by giving such information and assistance (including access to the Indemnified Party's premises and personnel and the right to examine and copy any accounts, documents or records) as the Indemnifying Party or any of its professional advisors may reasonably request. If the Indemnifying Party does not so respond within such thirty

(30)-day period, the Indemnifying Party shall be deemed to have rejected such claim, in which case the Indemnified Party shall be free to pursue such remedies as may be available to the Indemnified Party on the terms and subject to the provisions of this Agreement.

10.6 Tax Treatment of Indemnification Payments. All indemnification payments made under this Agreement shall be treated by the parties as an adjustment to the Purchase Price for Tax purposes, unless otherwise required by Law.

10.7 Exclusive Remedies. Subject to Section 12.12, the parties acknowledge and agree that after the Closing, their sole and exclusive remedy with respect to any and all claims (other than claims arising from intentional fraud or willful misconduct on the part of a party hereto in connection with the transactions contemplated by this Agreement) for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement, shall be pursuant to the indemnification provisions set forth in this Article X. In furtherance of the foregoing, each party hereby waives, to the fullest extent permitted under Law, any and all rights, claims and causes of action for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement it may have against the other party hereto and its Affiliates and each of its representatives arising under or based upon any Law, except pursuant to the indemnification provisions set forth in this Article X. Nothing in this Section 10.7 shall limit any Person's right to seek and obtain any equitable relief to which any Person shall be entitled pursuant to Section 12.12 or to seek any remedy on account of any intentional fraud or willful misconduct by any party hereto.

ARTICLE XI
TERMINATION

11.1 Termination. This Agreement may be terminated at any time prior to the Closing as follows:

(a) by mutual written consent of the Buyer and the Seller;

(b) by either the Seller or the Buyer, if:

(i) the Effective Time shall not have occurred on or before January 29, 2021 (the "End Date"); provided that the right to terminate this Agreement pursuant to this Section 11.1(b)(i) shall not be available to a party whose breach of any material provision of this Agreement primarily results in the failure of the Effective Time to have occurred by such time; or

(ii) any court of competent jurisdiction or other Governmental Authority of competent jurisdiction shall have issued an order or taken any other action, in each case, permanently restraining, enjoining or otherwise prohibiting prior to the Effective Time the consummation of the transactions, and, in each case, such order or other action shall have become final and nonappealable; provided that the right to terminate this Agreement pursuant to this Section 11.1(b)(ii) shall not be available to a party which has not complied in all material respects with its obligations under Section 6.8 and Section 7.4.

(c) by the Buyer, in the event of any material breach by Seller of any of Seller's agreements, representations or warranties contained herein and the failure of the Seller to cure such breach within thirty (30) days after receipt of written notice from the Buyer requesting such breach be cured;

(d) by the Seller, in the event of any material breach by the Buyer of any of the Buyer's agreements, representations or warranties contained herein and the failure of the Buyer to cure such breach within thirty (30) days after receipt of written notice from the Seller requesting such breach be cured; or

(e) by Buyer or Seller, upon notice to the other party, pursuant to Section 8.5; or

(f) by Buyer pursuant to Section 8.3(b).

11.2 Effects of Termination. In the event of any termination pursuant to Section 11.1, written notice thereof shall be promptly given in accordance with Section 12.4 by the party seeking termination to the other party and such termination shall be immediately effective. Upon any such termination, (a) each party will redeliver to the other party all documents, work papers and other materials of the other party relating to the transactions contemplated hereby, whether obtained before or after the execution of this Agreement, and (b) no party shall have any further rights or Liabilities hereunder except (i) with respect to those obligations set forth in the Confidentiality Agreement and those obligations set forth in Section 10.4(e), this Section 11.2, Section 12.2, Section 12.3, Section 12.8, and Section 12.12 which shall survive any such termination, and (ii) nothing herein shall relieve any party from Liability for its intentional and material breach of this Agreement occurring prior to such termination.

ARTICLE XII
MISCELLANEOUS

12.1 Benefit and Assignment. This Agreement may not be assigned by the Buyer without the prior written consent of the Seller, whether by merger, operation of law or otherwise. This Agreement may not be assigned by the Seller without the prior written consent of the Buyer, whether by merger, operation of law or otherwise. This Agreement shall be binding upon and inure to the benefit of the parties hereto, their permitted successors, assignees and beneficiaries in interest.

12.2 Governing Law; Consent to Jurisdiction; Waiver of Jury Trial.

This Agreement shall be governed by and construed in accordance with the internal laws of the State of Delaware without giving effect to any choice or conflict of law provision or rule (whether of the State of Delaware or any other jurisdiction) that would cause the application of Laws of any jurisdiction other than those of the State of Delaware.

ANY LEGAL SUIT, ACTION OR PROCEEDING ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY MAY BE INSTITUTED IN THE FEDERAL COURTS OF

THE UNITED STATES OF AMERICA OR THE COURTS OF THE STATE OF DELAWARE IN EACH CASE LOCATED IN THE CITY OF WILMINGTON, AND EACH PARTY IRREVOCABLY SUBMITS TO THE EXCLUSIVE JURISDICTION OF SUCH COURTS IN ANY SUCH SUIT, ACTION OR PROCEEDING. SERVICE OF PROCESS, SUMMONS, NOTICE OR OTHER DOCUMENT BY MAIL TO SUCH PARTY'S ADDRESS SET FORTH HEREIN SHALL BE EFFECTIVE SERVICE OF PROCESS FOR ANY SUIT, ACTION OR OTHER PROCEEDING BROUGHT IN ANY SUCH COURT. THE PARTIES IRREVOCABLY AND UNCONDITIONALLY WAIVE ANY OBJECTION TO THE LAYING OF VENUE OF ANY SUIT, ACTION OR ANY PROCEEDING IN SUCH COURTS AND IRREVOCABLY WAIVE AND AGREE NOT TO PLEAD OR CLAIM IN ANY SUCH COURT THAT ANY SUCH SUIT, ACTION OR PROCEEDING BROUGHT IN ANY SUCH COURT HAS BEEN BROUGHT IN AN INCONVENIENT FORUM.

EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT OR THE OTHER TRANSACTION DOCUMENTS IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS AGREEMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF THE OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

12.3 Expenses. Except as otherwise provided herein, each party shall be responsible for and shall pay all costs and expenses incurred by it up to and including the Closing Date in connection with the performance of and compliance with all transactions, agreements and conditions contained in this Agreement and the Transaction Documents to be performed or complied with by it including legal, accounting and investment banking fees.

12.4 Notices. Any and all notices, demands, and communications provided for herein or made hereunder shall be given in writing and shall be deemed given to a party at the earlier of (i) when actually delivered to such party, (ii) when facsimile transmitted to such party to the facsimile number indicated for such party below (or to such other facsimile number for a party as such party may have substituted by notice pursuant to this Section 12.4), (iii) the date of electronic

transmission (e.g., “pdf”), if so transmitted on a Business Day during normal business hours, and otherwise on the next Business Day, or (iv) when mailed to such party by registered or certified U.S. Mail (return receipt requested) or sent by overnight courier, confirmed by receipt, and addressed to such party at the address designated below for such party (or to such other address for such party as such party may have substituted by notice pursuant to this Section 12.4):

(a) If to the Buyer:

Donald E. Gales, Chairman
Hereford Ethanol LLC
4514 Cole Avenue, Suite 1175
Dallas, Texas 75205
Facsimile Number: (806) 374-3003
Email: dgales@frionaindustries.com

With a copy to:

Lawrence D. Ginsburg
Locke Lord LLP
2200 Ross Avenue, Suite 2800
Dallas, TX 75201
Facsimile Number: (214) 756-8524
Email: lginsburg@lockelord.com

(b) If to the Seller:

Todd Becker, Chief Executive Officer
Green Plains Inc.
1811 Aksarben Drive
Omaha, NE 68106
Facsimile Number: (402) 952-4916
Email: todd.becker@gpreinc.com

With a copy to:

Michelle Mapes, Chief Legal &Admin Officer
Green Plains Inc.
1811 Aksarben Drive
Omaha, NE 68106
Facsimile Number: (402) 952-4916
Email: michelle.mapes@gpreinc.com

12.5 Counterparts. This Agreement may be executed simultaneously in two or more counterparts, including by facsimile, PDF or other electronic transmission, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument, provided that all such counterparts, in the aggregate, shall contain the signatures of the parties hereto.

12.6 Amendment, Modification and Waiver. This Agreement may not be modified, amended or supplemented except by mutual written agreement of the parties hereto. Any party may waive in writing any term or condition contained in this Agreement and intended to be for its benefit; provided, however, that no waiver by any party, whether by conduct or otherwise, in any one or more instances, shall be deemed or construed as a further or continuing waiver of any such term or condition.

12.7 Entire Agreement. This Agreement, the Transaction Documents and the Exhibits and Schedules delivered herewith, together with the Confidentiality Agreement, represent the full and complete agreement of the parties with respect to the subject matter hereof and supersede and replace any prior understandings and agreements among the parties with respect to the subject matter hereof and supersede and replace any prior understandings and agreements (written or oral) among the parties with respect to the subject matter hereof (other than the Confidentiality Agreement). The recitals to this Agreement are an integral part of this Agreement and hereby incorporated by reference.

12.8 Publicity. The parties agree that no public announcements or disclosures of any kind concerning the terms of this Agreement or concerning the transactions contemplated by this Agreement and the Transaction Documents shall be made without the consent of the Seller and the Buyer, except as and to the extent that any such parties shall be so obligated by Law, in which case the other party shall be advised and the Buyer and the Seller shall use their best efforts to cause a mutually agreeable release or announcement to be issued; provided, that the foregoing shall not preclude communications or disclosures necessary to implement the provisions of this Agreement and the Transaction Documents or to comply with applicable Laws.

12.9 Severability. If any term or other provision of this Agreement is invalid, illegal or incapable of being enforced by any rule of Law or public policy, all other terms, conditions and provisions of this Agreement shall nevertheless remain in full force and effect so long as the economic and legal substance of the transactions contemplated hereby are not affected in any manner materially adverse to any party. Upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the parties shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties as closely as possible in a mutual acceptable manner in order that the transaction contemplated by this Agreement may be consummated as originally contemplated to the fullest extent possible.

12.10 Further Assurances. From time to time, as and when requested by a party, the other party shall execute and deliver, or cause to be executed and delivered, all such documents and instruments and shall take, or cause to be taken, all such further or other actions, as such party may reasonably deem necessary or desirable to carry out the intent and purposes of this Agreement.

12.11 Time of the Essence. Time is of the essence in the performance by any party of its obligations hereunder. If the date specified in this Agreement for giving any notice or taking any action is not a Business Day (or if the period during which any notice is required to be given or any action taken expires on a date which is not a Business Day), then the date for giving such notice or taking such action (and the expiration date of such period during which notice is required to be given or action taken) shall be the next day which is a Business Day.

12.12 Enforcement of this Agreement.

(a) The parties agree that irreparable damage for which monetary damages, even if available, would not be an adequate remedy would occur in the event that the parties do not perform the provisions of this Agreement (including any party failing to take such actions as are required of it hereunder in order to consummate this Agreement) in accordance with its specified terms or otherwise breach such provisions. The parties acknowledge and agree that

(i) the parties will be entitled, in addition to any other remedy to which they are entitled at law or in equity, to an injunction, specific performance and other equitable relief to prevent breaches (or threatened breaches) of this Agreement and to enforce specifically the terms and provisions hereof; and (ii) the right of specific enforcement is an integral part of the transaction and without that right, neither the Seller nor Buyer would have entered into this Agreement.

(b) The parties agree not to raise any objections to (i) the granting of an injunction, specific performance or other equitable relief to prevent or restrain breaches or threatened breaches of this Agreement by the Seller, on the one hand, or the Buyer, on the other hand; and (ii) the specific performance of the terms and provisions of this Agreement to prevent breaches or threatened breaches of, or to enforce compliance with, the covenants, obligations and agreements of Seller pursuant to this Agreement. Any party seeking an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement will not be required to provide any bond or other security in connection with such injunction or enforcement, and each party irrevocably waives any right that it may have to require the obtaining, furnishing or posting of any such bond or other security.

12.13 Third Party Beneficiaries. Nothing in this Agreement is intended or will be construed to entitle any person or entity, other than Buyer and Seller or their respective permitted transferees and assigns, to any claim, cause of action, remedy or right of any kind.

12.14 Interpretation. For purposes of this Agreement, (a) the words “include,” “includes” and “including” shall be deemed to be followed by the words “without limitation,” and (b) the words “herein,” “hereof,” “hereby,” “hereto” and “hereunder” refer to this Agreement as a whole. Unless the context otherwise requires, references herein (i) to Articles, Sections, Appendices, Exhibits and Schedules mean the Articles and Sections of, and the Appendices, Exhibits and Schedules attached to, this Agreement; (ii) to an agreement, instrument or other document means such agreement, instrument or other document as amended, supplemented and modified from time to time to the extent permitted by the provisions thereof and by this Agreement; and (iii) to a statute means such statute as amended from time to time and includes any successor legislation thereto and any regulations promulgated thereunder. The Appendices, Schedules and Exhibits referred to herein shall be construed with and as an integral part of this Agreement to the same extent as if they were set forth verbatim herein. Titles to Articles and headings of Sections are inserted for convenience of reference only and shall not be deemed a part of or to affect the meaning or interpretation of this Agreement. This Agreement and the Transaction Documents shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting an instrument or causing any instrument to be drafted.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date and year first above written.

BUYER:

HEREFORD ETHANOL PARTNERS, L.P.

By: Hereford Ethanol LLC, its general partner

By: /s/ Donald E. Gales

Donald E. Gales

Chairman

SELLER:

GREEN PLAINS HEREFORD LLC

By: /s/ Todd Becker

Name: Todd Becker

Its: President & CEO

[Signature Page to Asset Purchase Agreement]

EXHIBIT A

DEFINITIONS

Certain Defined Terms. As used in this Agreement, the following terms shall have the meanings specified in this Exhibit A unless the context otherwise requires.

"Ancillary Real Property Rights" has the meaning set forth in Section 1.1(d).

"Affiliate" means, with respect to a specified Person, a Person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the Person specified.

"Agreement" means this Asset Purchase Agreement, together with all Exhibits and Schedules hereto, as amended, restated, supplemented or otherwise modified from time to time in accordance with the terms hereof.

"Assumed Contracts" has the meaning set forth in Section 1.1(c)

"Assignment and Assumption Agreement" has the meaning set forth in Section 3.2.

"Assumed Liabilities" has the meaning set forth in Section 1.3.

"Base Purchase Price" has the meaning set forth in Section 2.1(a).

"Benefit Plan" means (a) any pension plan, defined contribution plan, profit-sharing plan, health or welfare plan and any other employee benefit plan (within the meaning of Section 3(3) of ERISA) that is maintained or sponsored by Seller or any of its ERISA Affiliates or to which such entity contributes or for which such entity otherwise has or may have any Liability, contingent or otherwise, either directly or as a result of an ERISA Affiliate, and (b) any other benefit arrangement, obligation or practice, whether or not legally enforceable, to provide benefits, other than currently paid salary or customary indemnification, as compensation for services rendered, to one or more present or former Employees that is maintained or sponsored by Seller or any of its ERISA Affiliates or to which such entity contributes or for which such entity otherwise has or may have any Liability, contingent or otherwise, either directly or as a result of an ERISA Affiliate, including, without limitation, employment agreements, offer letters, severance policies or agreements, change of control agreements, executive compensation arrangements, deferred compensation arrangements, incentive arrangements, consulting or other compensation arrangements, bonus plans, stock options, stock grant or stock purchase plans, tuition reimbursement programs or scholarship programs, 529 plans, any plans subject to Section 125 of the Code or any comparable provision of any other applicable Law, any plans providing benefits or payments in the event of a change of ownership or control and each other employee benefit plan, fund, program, agreement or arrangement.

"Business" has the meaning set forth in the recitals to this Agreement.

"Business Day" means any day except Saturday, Sunday or any day on which banks are generally not open for business in the city of New York, New York.

"Buyer" has the meaning set forth in the first paragraph to this Agreement.

"Buyer Casualty Threshold" means 5% of the Base Purchase Price, in the aggregate.

"Buyer Indemnitees" means Buyer, its Affiliates and their respective officers, partners, members, managers, employees, agents, representatives, successors and assigns.

"Buyer Backup Information" has the meaning set forth in Section 2.3(c).

"Buyer Closing Certificate" has the meaning set forth in Section 9.3(b).

"Buyer Guaranty" means the guaranty agreement that has been issued by the Buyer Guarantor and delivered to Seller on the Effective Date, a copy of which is attached hereto as Exhibit E-1.

"Buyer Rail Car" has the meaning set forth in Section 6.13(b).

"CCS Note" has the meaning set forth in Section 2.1(c).

"Carve-Out Tracts" has the meaning set forth in Section 6.10.

"Casualty" has the meaning set forth in Section 8.5(a)

"Casualty Event Termination Date" has the meaning set forth in Section 8.5(b)(i).

"Casualty Notice" has the meaning set forth in Section 8.5(a)

"Closing" has the meaning set forth in Section 3.1.

"Closing Date" has the meaning set forth in Section 3.1.

"Closing Net Working Capital" means the Net Working Capital reflected in the Closing Net Working Capital Statement as calculated in accordance with GAAP.

"Closing Net Working Capital Statement" means an unaudited statement of Net Working Capital at the close of business on the Closing Date, prepared by the Buyer in accordance with GAAP.

"Closing Amount" has the meaning set forth in Section 2.2(a).

"Code" means the Internal Revenue Code of 1986, as amended.

"Commodity Contracts" has the meaning set forth in Section 1.1(p).

"Confidential Information" has the meaning set forth in Section 6.15.

"Confidentiality Agreement" means that certain letter agreement between Parent and the Buyer dated as of June 12, 2020.

"Contracts" means any written agreement, contract, lease, license instrument, loan, note,, mortgage, deed of trust, pledge or security agreement, guaranty, indemnity, warranty, assignment, power of attorney, certificate, purchase order, work order, commitment, covenant, assurance or undertaking of any nature, including all amendments, modifications and supplements thereto, but excluding the Permits, this Agreement and any agreements to be entered into pursuant to this Agreement.

"Control," "Controlled" and "Controlling" means possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of a Person, whether through ownership of securities, by contract or otherwise.

"Credit Support Arrangements" has the meaning set forth in Section 8.2.

"Cure Period" has the meaning set forth in Section 8.3(b).

"Damaged Portion" has the meaning set forth in Section 8.5(a)

"Deductible" has the meaning set forth in Section 10.4(a).

"Direct Claim" has the meaning set forth in Section 10.5(c).

"Effective Date" has the meaning set forth in the introductory paragraph.

"Effective Time" has the meaning set forth in Section 3.1.

"End Date" has the meaning set forth in Section 11.1(b)(i).

"Employee" means any employee of Seller or any of its Affiliates who are employed exclusively in the Business.

"Environmental Law" means any Legal Requirement which relates to or otherwise imposes liability, obligations, responsibility, or standards with respect to zoning, land use, pollution, or the restoration, repair, remediation or protection of natural resources, human health or the environment (including ambient air, surface water, groundwater, land surface, subsurface soil strata), including without limitation, any Legal Requirement relating to the presence, use, manufacture, processing, distribution, production, generation, handling, transport, storage, disposal, labeling, discharge, release, threatened release, treatment, control or cleanup of any Environmental Material. For avoidance of doubt, Environmental Law included the RFS Program and the Occupational Safety and Health Act of 1970.

"Environmental Material" means: (A) any petroleum substance, petroleum product, underground storage tank, underground cistern, radioactive material, asbestos in any form that is or could become friable, urea formaldehyde foam insulation, PCB-containing Material; (B) any Hazardous Substance, Hazardous Material, or any other material, substance, chemical, waste, contaminant or pollutant which is now or hereafter defined as or determined to be hazardous, extremely hazardous, toxic, dangerous, restricted, or a nuisance, or words of similar import, under any Environmental Law; or (C) any other material, substance, chemical, waste, contaminant,

pollutant or exposure to which is now prohibited, limited or regulated by any Governmental Authority.

"Equipment" has the meaning set forth in Section 1.1(f).

"ERISA" means the Employee Retirement Income Security Act of 1974, as amended.

"Estimated Damage Amount" has the meaning set forth in Section 6.13(d).

"Estimated Inventory Value" has the meaning given such term in Exhibit B.

"Estimated Net Working Capital" means the estimated Net Working Capital as reflected on the Estimated Net Working Capital Statement, as agreed upon by the Buyer and the Seller pursuant to Section 2.3(b).

"Estimated Net Working Capital Statement" means an estimated unaudited statement of Net Working Capital at the close of business on the Closing Date, prepared in accordance with GAAP.

"Ethanol Plant" has the meaning set forth in the recitals to this Agreement.

"Exceptions" has the meaning set forth in Section 8.3(a).

"Excluded Assets" has the meaning set forth in Section 1.2.

"Excluded Contracts" has the meaning set forth in Section 1.2(c).

"Excluded Liabilities" has the meaning set forth in Section 1.4.

"Final Inventory Value" has the meaning set forth in Exhibit B.

"FIRPTA Certificate" has the meaning set forth in Section 9.2(e).

"Fundamental Warranties" means the representations and warranties set forth in Section 4.1, Section 4.2, Section 4.3(a), Section 4.3(b)(i), Section 4.4, Section 4.14, Section 5.1, Section 5.2(a) and Section 5.2(b)(i).

"GAAP" means United States generally accepted accounting principles as in effect from time to time.

"Governmental Authority" means the government of the United States or applicable foreign nation, any state, province, municipality or other governmental unit, or any agency, board, bureau, instrumentality, department or commission (including any court or other tribunal) of any of the foregoing.

"Green Hereford" has the meaning set forth in the introductory paragraph.

"Green Shift License Agreement" means that certain Early Adopter License Agreement dated as of October 26, 2015, effective as of January 17, 2015, between GS Cleantech Corporation and Green Plains Inc.

"Hazardous Material" means hazardous materials as defined under the regulations adopted pursuant to the Hazardous Materials Transportation Act. Such regulations appear at 49 C.F.R. Part 171, et seq.

"Hazardous Substance" means hazardous substances as defined under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601, et seq., and under comparable state laws.

"Hereford Plant" has the meaning set forth in the recitals to this Agreement.

"Indebtedness" of any Person means (a) all indebtedness for borrowed money, (b) all obligations issued, undertaken or assumed as the deferred purchase price of property or services other than trade accounts arising in the ordinary course of business, (c) all reimbursement obligations with respect to surety bonds, letters of credit (to the extent not collateralized with cash or cash equivalents), bankers' acceptances and similar instruments (in each case, whether or not matured), (d) all obligations evidenced by notes, bonds, debentures or similar instruments, including obligations so evidenced incurred in connection with the acquisition of property, assets or businesses, (e) all indebtedness created or arising under any conditional sale or other title retention agreement, or incurred as financing, in either case with respect to property acquired by the Person, (f) all obligations of such Person as lessee that should be capitalized in accordance with GAAP, (g) all indebtedness referred to in clauses (a) through (f) above secured by (or for which the holder of such Indebtedness has an existing right, contingent or otherwise, to be secured by) any Lien upon or in assets or property (including accounts and contracts rights) owned by such Person, even though such Person has not assumed or become liable for the payment of such Indebtedness, and (h) all agreements, undertakings or arrangements by which any Person guarantees, endorses or otherwise becomes or is contingently liable for (by direct or indirect agreement, contingent or otherwise, to provide funds for payment, to supply funds to, or otherwise to invest in, a debtor, or otherwise assure a creditor against loss) the Indebtedness or other similar obligation or liability of any other Person, or guarantees the payment of dividends, or other distributions upon the equity securities or interests of any other Person.

"Indemnified Party" has the meaning set forth in Section 10.4.

"Indemnifying Party" has the meaning set forth in Section 10.4.

"Independent Accounting Firm" has the meaning set forth in Section 2.3(c).

"Intellectual Property" means all intellectual property, including, without limitation, (i) all inventions (whether patentable or unpatentable and whether or not reduced to practice), all improvements thereto, and all patents, patent applications, and patent disclosures, together with all reissuances, continuations, continuations-in-part, revisions, extensions, and reexaminations thereof, (ii) all trademarks, service marks, trade dress, logos, trade names, brand names and corporate names (excluding the name "Green Plains" and all derivatives thereof), together with all translations, adaptations, derivations, and combinations thereof and including all goodwill

associated therewith, and all applications, registrations, and renewals in connection therewith, (iii) all copyrightable works, all copyrights, and all applications, registrations, and renewals in connection therewith, (iv) all mask works and all applications, registrations, and renewals in connection therewith, (v) all trade secrets and confidential business information (including ideas, research and development, know-how, formulas, compositions, manufacturing and production processes and techniques, technical data, designs, drawings, specifications, customer and supplier lists, pricing and cost information, and business and marketing plans and proposals), (vi) all computer software (including data and related documentation), (vii) all other proprietary rights, and (viii) all copies and tangible embodiments thereof (in whatever form or medium).

"Intercompany Accounts" means amounts due to, and amounts due from, Affiliates.

"Inventories" has the meaning set forth in Exhibit B.

"Inventory Methodology" has the meaning set forth in Section 2.3(a).

"Inventory Value" means, the value of the Inventories of the Seller as of the Closing, as determined by the Seller and the Buyer in accordance with the Inventory Methodology.

"IRS" means the Internal Revenue Service.

"Knowledge" means, (a) when applied to the Buyer, the actual knowledge of Donald E. Gales, and (b) when applied to the Seller, the actual knowledge after due inquiry and investigation of Adam Crotteau, Mike Stone, Paul Kolomaya or Patrich Simpkins.

"Laws" means, collectively, all federal, state, local, municipal, foreign or international (including multi-national) constitutions, laws, statutes, ordinances, rules, regulations, codes, treaties or principles of common law.

"Lease Charge" has the meaning set forth in Section 6.13(c).

"Lease Rates" has the meaning set forth in Section 6.13(a).

"Leased Real Property" has the meaning set forth in Section 1.1(e).

"Legal Requirement" means any and all statutes, Laws, codes, ordinances, regulations, rules, directives, policy, orders, judgments, writs, injunctions, rulings, decrees, bylaws or common law (whether presently in effect or hereinafter enacted, adopted, promulgated or issued) of any Governmental Authority.

"Letter of Intent" means that certain Letter of Intent dated September 8, 2020, between Parent and Hereford Ethanol LLC, the general partner of the Buyer.

"Liability" means any liability or obligation (whether known or unknown, whether asserted or unasserted, whether absolute or contingent, whether accrued or unaccrued, whether liquidated or unliquidated, and whether due or to become due), including, without limitation, any liability for Taxes.

"Lien" means collectively, any mortgage, pledge, lien, security interest, claim, charge, restriction, lease, tenancy, license, other possessory interest, right of purchase, conditional sales obligation, easement, restriction, covenant, condition or other encumbrance of any kind.

"Loaned Cars" has the meaning set forth in Section 6.13(e).

"Losses" means any and all losses, obligations, damages (including wrongful death, personal injury or property damage), liabilities, settlement payments, awards, judgments, fines, penalties, costs and expenses (including those incurred with investigating, preparing, defending, bringing or prosecuting any claim, action, suit or proceeding and including, but not limited to, all costs and expenses of all attorneys, experts, and consultants in all tribunals and whether or not legal proceedings are commenced), deficiencies or other charges.

"Market Charge" has the meaning set forth in Section 6.13(c).

"Market Rates" has the meaning set forth in Section 6.13(c).

"Material Contracts" has the meaning set forth in Section 4.9.

"Mortgage Lien" has the meaning set forth in Section 8.3(b).

"Net Names" means all rights in internet web sites, web pages, URLs, domain names, directory names, other computer addresses, Internet files, HTML files, image files (including but not limited to jpeg, gif, tif, pdf, and java code), links, hyperlinks and other files, pages, sites, names or addresses located on an on-line global computer network presently used by the Seller.

"Net Working Capital" has the meaning set forth in Section 2.1(b).

"Net Working Capital Documents" has the meaning set forth in Section 2.3(c)(i).

"Notice of Objection" has the meaning set forth in Section 2.3(c)(i).

"Objection Period" has the meaning set forth in Section 2.3(c)(i).

"Orders" means all decisions, injunctions, writs, guidelines, orders, arbitrations, awards, judgments, subpoenas, verdicts or decrees entered, issued, made or rendered by any Governmental Authority.

"Ordinary Course of Business" means the ordinary course of business consistent with past practice (including with respect to quantity and frequency).

"Other Closing Adjustments" has the meaning set forth in Section 2.3(c)(i).

"Owned Land" has the meaning set forth in Section 1.1(d).

"Owned Improvements" has the meaning set forth in Section 1.1(d).

"Owned Real Estate" has the meaning set forth in Section 1.1(d).

"Parent" means Green Plains Inc., an Iowa corporation and the ultimate parent of the Seller.

"Payables" has the meaning set forth in Section 2.4(a)(i).

"PCB-containing Material" means polychlorinated biphenyls, including PCB-laden lubricating or hydraulic oils or transformers or other equipment which contain dielectric fluid containing polychlorinated biphenyls.

"Permits" has the meaning set forth in Section 1.1(h).

"Permitted Liens" means municipal and zoning ordinances, recorded easements, covenants and restrictions provided the same do not prohibit or materially interfere with the present use, or materially affect the present value, of the Owned Real Estate, general taxes levied on or after January 1, 2020 and not yet due or payable, and all Exceptions to which Buyer does not object or waives its objection pursuant to Section 8.3(b).

"Person" means an individual, partnership, corporation, business trust, limited liability company, limited liability partnership, joint stock company, trust, unincorporated association, joint venture or other entity or a Governmental Authority.

"Plant Specific Intellectual Property" means all Intellectual Property exclusively used in the operation of the Ethanol Plant as it is currently operated by Seller and either (a) owned by the Seller or its respective Affiliates, or (b) used pursuant to a license or other similar agreement between Seller, or Affiliates of Seller, and a Third Party; provided, however, that the definition of Plant Specific Intellectual Property does not include Seller's licenses to Intellectual Property set forth in the excluded contracts listed in Schedule 1.2(c), which licenses provide rights to Intellectual Property currently used in and necessary for the operation of the Ethanol Plant as it is currently operated by Seller, but which rights are not transferred to Buyer as part of this Agreement.

"Post-Closing Tax Period" has the meaning set forth in Section 8.4(b).

"Pre-Closing Tax Period" has the meaning set forth in Section 8.4(b).

"Prepaid Expenses" has the meaning set forth in Section 1.1(b).

"Proceedings" means any action, arbitration, audit, hearing, investigation, litigation or suit (whether civil, criminal, administrative, judicial, or investigative, whether formal or informal, whether public or private) commenced, brought, conducted or heard by or before, or otherwise involving, any Governmental Authority or arbitrator.

"Property Taxes" has the meaning set forth in Section 8.4(b).

"Purchase Price" has the meaning set forth in Section 2.1.

"Purchased Assets" has the meaning set forth in Section 1.1.

"Qualified Benefit Plan" has the meaning set forth in Section 4.15(b).

"Qualifying Rail Cars" has the meaning set forth in Section 6.13(b).

"Rail Car Agreements" has the meaning set forth in Section 6.13(a).

"Real Estate" means, collectively, the Owned Real Estate and the Leased Real Property.

"Real Property Leases" shall mean all real property leases and subleases (and all amendments, modifications or supplements thereto) to which a member of the Seller Group is a party (as lessee, sublessee, lessor or sublessor) relating to all or any portion of Leased Real Property.

"Records" means forms, files, plans and other data and information which are necessary to or desirable for the ownership, use, maintenance or operation of the Purchased Assets, the Ethanol Plant or the Business and which are owned or used by Seller, including, without limitation, all blueprints and specifications, system engineering and design information and all associated data files and data bases to the extent such systems exist exclusively for the operation of the Ethanol Plant, all personnel, and labor relations records, all environmental control records, environmental impact reports, statements, studies and related documents, handbooks, technical manuals and data, engineering specifications and work papers, all sales and use Tax Returns, reports, files and records, asset history records and files, all maintenance and repair records, all correspondence, notices, citations all plans, maps and surveys of the Real Estate, all plans and designs of buildings, structures, fixtures and equipment, and all books and records relating to the purchase of materials, supplies and services, financial, accounting and operations matters, product engineering, research and development, manufacture and sale of products, customer and vendor lists and all files and documents (including credit information) relating to customers and vendors of the Business, in each case which relate exclusively to the Purchased Assets.

"Repair Costs" has the meaning set forth in Section 8.5(b)(i).

"Repair Cost Dispute" has the meaning set forth in Section 8.5(b)(iii).

"Repair Negotiation Period" has the meaning set forth in Section 8.5(b)(ii).

"Required Consent" has the meaning set forth in Section 6.5.

"Restricted Interests" has the meaning set forth in Section 1.5(a).

"RFS Program" means Renewable Fuel Standard Program under the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 and implementing regulations, including without limitation, 40 C.F.R. Part 80, Subpart K and Subpart M, as the same may be amended from time to time.

"RIN Pathway" means each pathway used by each Purchased Asset to generate valid EPA RINs under the RFS Program.

"Seller" has the meaning set forth in the first paragraph to this Agreement.

"Seller Casualty Threshold" means 15 % of the Base Purchase Price, in the aggregate.

"Seller Closing Certificate" has the meaning set forth in Section 9.2(c).

"Seller Guaranty" means the guaranty agreement that has been issued by the Seller Guarantor and delivered to Buyer on the Effective Date, a copy of which is attached hereto as Exhibit E-2.

"Seller Group" means the Seller together with its Affiliates.

"Seller Indemnitees" means Seller, its Affiliates and their respective officers, managers, directors, employees, agents, representatives, successors and assigns.

"Stored Grain" has the meaning set forth in Section 6.11.

"Straddle Period" means any Tax period beginning on or before and ending after the Closing Date.

"Survey", "Existing Surveys" and "Updated Survey" have the meanings set forth in Section 8.3(a).

"Syngenta/ADM Actions" has the meaning set forth in Section 1.2(l).

"Taking" has the meaning set forth in Section 8.5(a).

"Tax" means any federal, state, local or foreign income, gross receipts, license, payroll, employment, excise, severance, stamp, occupation, premium, windfall profits, environmental, customs duties, capital stock, franchise, profits, withholding, social security, unemployment, disability, real property, personal property, sales, use, transfer, registration, value added, alternative or add-on minimum, estimated or other tax of any kind whatsoever, including any interest, penalty or addition thereto, whether disputed or not.

"Tax Period" means any period prescribed by any Governmental Authority for which a Tax Return is required to be filed or a Tax is required to be paid.

"Tax Return" means any return, declaration, report, claim for refund, or information return or statement relating to Taxes, including any schedule or attachment thereto, and including any amendment thereof.

"Tax Sharing Arrangement" means any written or unwritten agreement or arrangement for the allocation of payment of Tax liabilities or payment for Tax benefits with respect to a consolidated, combined or unitary Tax Return which Tax Return includes or included the Seller.

"Third Party" means a Person that is not a party to this Agreement.

"Third Party Claim" has the meaning set forth in Section 10.5.

"Third-Party Estimate" has the meaning set forth in Section 8.5(b)(iii).

"Title Commitments" has the meaning set forth in Section 8.3(a).

"Title Objections" has the meaning set forth in Section 8.3(b).

"Title Policy" shall mean an Owner's Policy of Title Insurance in Texas Land Title Association (TLTA) Form T-1, insuring Buyer's title in the Real Property, subject only to the standard pre-printed exceptions of said Form T-1 and those Exceptions which constitute Permitted Liens and that are not Seller Liens.

"Trade Secrets" means all proprietary information of Seller necessary to the operation of the Ethanol (other than as included in the Excluded Assets) that is not generally known and is used primarily in or necessary for the operation of the Business or the Ethanol Plant, as to which reasonable efforts have been made to prevent unauthorized disclosure and which provides a competitive advantage to those who know or use it.

"Transaction Documents" has the meaning set forth in Section 1.5(b).

"Transferred Employee" has the meaning set forth in Exhibit C.

"Transition Services Agreement" has the meaning set forth in Section 3.2(a)(ix).

"WARN" has the meaning set forth in Section 4.16(d).

Interpretation. Unless otherwise expressly provided or unless the context requires otherwise, (a) all references in this Agreement to Articles, Sections, Schedules and Exhibits shall mean and refer to Articles, Sections, Schedules and Exhibits of this Agreement; (b) all references to statutes and related regulations shall include all amendments of the same and any successor or replacement statutes and regulations; (c) words using the singular or plural number also shall include the plural and singular number, respectively; (d) references to "hereof," "herein," "hereby" and similar terms shall refer to this entire Agreement (including the Schedules and Exhibits hereto); and (e) references to any Person shall be deemed to mean and include the successors and permitted assigns of such Person (or, in the case of a Governmental Authority, Persons succeeding to the relevant functions of such Person).

Other Terms. Except as otherwise specifically provided, each accounting term used herein shall have the meaning given to it under GAAP.

EXHIBIT B
INVENTORY METHODOLOGY

1. Scope and Definitions

A. Scope and Purpose of this Exhibit. This Inventory Methodology (the "Exhibit") sets forth (i) the methods by which the quantity of the Products and the Chemicals which make up the Inventories at the time of Closing shall be measured or otherwise determined, and (ii) the formulas or methodology for determining the value of such Inventories. Annex I of this Exhibit contains the physical inventory measurement procedures and Annex II of this Exhibit contains the inventory valuation formulas and pricing methodology.

B. Certain Defined Terms. As used in this Exhibit, (i) the following capitalized terms have the following respective meanings, and (ii) other capitalized terms have the meanings ascribed to them in the main body of the Agreement; in each case unless context clearly requires otherwise:

"Annex" means the corresponding Annex to this Exhibit.

"ASTM" means ASTM International and the technical and engineering standards promulgated by ASTM International.

"Business Day" has the same meaning as that term is defined in the Agreement.

"CBOT" means the Chicago Board of Trade.

"Chemical Inventory" means all volumes of Chemicals owned by Seller or its Affiliates that are located in the Chemical Storage Facilities as of the Inventory Transfer Time.

"Chemical Storage Facilities" means and includes all tanks, drums, totes and other designated facilities for the storage of Chemicals and located within the boundaries of the Ethanol Plant.

"Chemicals" means all yeast, enzymes, chemicals, and other materials that are currently used in the manufacturing process conducted at the Ethanol Plant.

"CPL" means the Correction for the effect of Pressure on Liquid.

"CTL" means the Correction for the effect of Temperature on Liquid.

"DTN" means Data Transmission Network.

"Estimated Inventory Valuation Statement" has the meaning given such term in Section 4 D of this Exhibit.

"Estimated Inventory Value" has the meaning given such term in Section 4 D of this Exhibit.

"Ethanol Plant" has the same meaning as that term is defined in the Agreement.

"Final Inventory Determination" has the meaning given such term in Section 4 E. of this Exhibit.

"Final Inventory Value" means the amount of the final Inventory Value as determined in accordance with the procedures described in Section 4 of this Exhibit.

"Gallon" means one standard United States gallon at 60 degrees Fahrenheit.

"Gross Standard Volume" means the volume at 60 degrees Fahrenheit, including suspended sediment and water, as calculated by the most recent standards under the API Manual.

"Inventories" means the Product Inventory, the Chemical Inventory and the WIP Inventory.

"Inventory Committee" has the meaning given such term in Section 2 A of this Exhibit.

"Inventory Schedule" has the meaning given such term in Section 2 A of this Exhibit.

"Inventory Transfer Time" means 12:00:01 a.m. local time at each Ethanol Plant on the Closing Date.

"Inventory Value" has the meaning given such term in Section 4 C of this Exhibit.

"In-Transit Inventory" means all volumes of Products that Seller has sold or contracted to sell, and in both cases a bill of lading therefore has been issued, on or before the Inventory Transfer Time that are scheduled for delivery to a third party facility or customer, but which have not, as yet, been delivered to a third party facility or customer as of the Inventory Transfer Time.

"Inspection Company" means an approved third party inspection company as mutually agreed to by Seller and Buyer, if any.

"Net Standard Volume" means the volume at 60 degrees Fahrenheit after deducting S&W from the Gross Standard Volume.

"OPIS" means Oil Price Information Service.

"Product Inventory" means all volumes of Products owned by Seller or its respective Affiliates that are located in the Product Tanks and Storage Facilities as of the Inventory Transfer Time.

"Product Inventory Quality Report" has the meaning given such term in Section 4 E of this Exhibit.

"Product Inventory Quantity Report" has the meaning given such term in Section 4 A of this Exhibit.

"Product Tanks and Storage Facilities" means and includes all above-ground tanks, silos, and storage facilities, including any designated flat-storage buildings used for the storage of

Products and railcars used for the storage of Products where the Product has not yet been billed out or released to the rail carrier, located within the boundaries of the Ethanol Plant.

"Products" means all corn, dried distillers grains, modified distillers grains, wet distillers grains, finished ethanol (including Undenatured Ethanol), natural gasoline (denaturant), corn oil and any other products produced in the Ordinary Course of Business conducted at the Ethanol Plant.

"Schedule" means the corresponding Schedule to this Exhibit.

"Tank Heels" means the volume of Products below the lowest suction in a tank, unless the tank is equipped with a regular side entry pipe in which case "Tank Heels" means the volume below the middle of the lowest suction in such tank.

"Total Observed Volume" has the meaning given such term in Annex I.

"Undenatured Ethanol" means any 190 proof ethanol and/or 200 proof ethanol that is maintained in the Product Tank and Storage Facilities as of the Inventory Transfer Time.

"WIP Inventory" means the fermented corn bushels that Seller or its Affiliates have title to which are, as of the Inventory Transfer Time, still involved in the production and fermenting process (including, slurry, liquification, fermentation and beerwell) within each of the Ethanol Plant and excludes any non-merchantable substances or products such as water or waste product. The parties agree that Undenatured Ethanol shall be included as WIP Inventory, but for purposes of this Exhibit shall be measured and valued hereunder as Product Inventory.

2. Appointment of Inventory Committee.

A. Inventory Committee. An inventory committee (the "Inventory Committee") consisting of a representative of each of Buyer and the Seller and an Inspection Company (if any) shall be established to prepare and conduct the physical inventory pursuant to the procedures set forth in this Exhibit and Annex I. As soon as practicable following the execution of the Agreement, but not less than ten (10) Business Days before the Closing Date, Buyer and Seller shall each designate their respective Inventory Committee representatives, and the representatives shall appoint the Inspection Company, as agreed to by the Parties. Promptly upon appointment of the Inspection Company, Seller shall provide Buyer and the Inspection Company with all information relating to the Inventories, including tank and product types, which is necessary to design and carry out an effective physical inventory in the manner set forth in this Exhibit and in accordance with the procedures set forth in Annex I. The Inventory Committee shall use this information to develop a mutually agreed upon measuring and sampling schedule by location and tank (the "Inventory Schedule"). The Inventory Schedule shall be approved by the Inventory Committee no later than five (5) Business Days prior to the Closing Date. All costs relating to the Inspection Company and carrying out the physical inventory, including man hours, laboratory testing, travel and incidental costs (such as bottles, cylinders, seals, etc.), shall be shared equally by Buyer and Seller (1/2 each). Any additional requests (outside of the inventory process) to the Inspection Company will be billed to the requesting party at 100%.

3. Determination and Measurement of Inventories.

A. Measurement of Product Inventory and WIP Inventory. A physical inventory of the Product Inventory and WIP Inventory will be taken in accordance with this Exhibit and Annex I.

B. Measurement of Chemical Inventory. The quantity of Chemical Inventory shall be determined based upon the applicable books and records of Seller or its Affiliates and the actual storage capacity of the applicable tanks/storage facilities where the Chemical Inventory is stored immediately prior to the Inventory Transfer Time. As of the date of this Exhibit, the type (grade) of each Chemical comprising the Chemical Inventory and the storage capacity of the tank/facility where the Chemical Inventory is stored or used is set forth on Schedule 2

. Buyer shall have the right to confirm the volume of Chemicals as reflected in the books and records of Seller. For this confirmation, the Inventory Committee shall inspect and take a physical inventory of the Chemicals at or immediately prior to the Inventory Transfer Time. If there are any discrepancies between the volume of Chemicals reflected in the books and records of Seller and the physical inventory conducted by the Inventory Committee, the physical inventory shall control.

C. Tank Heels. The Tank Heels shall be measured as part (and not separately from) of the Product Inventory.

D. In-Transit Inventory. The Parties expressly agree that In-Transit Inventory shall not be included as part of the Inventories, and Seller hereby retains all rights and obligations with respect to such In-Transit Inventory. Any loaded railcar located within the rail yard of the Ethanol Plant that has not been released to the railroad (billed) and for which no bill of lading has been issued shall be considered and measured as Product Inventory. A full listing of such loaded railcars shall be provided by Seller, along with a listing of railcars released to the railroad within 24 hours of the Inventory Transfer Time.

E. Miscellaneous Inventories. All other Inventories at the Ethanol Plant that cannot be measured, will transfer to Buyer or Buyer's Affiliate at Closing for no additional consideration in accordance with the Agreement.

F. RINs. During the Inventory Process, Buyer shall have the right, along with the Seller, to verify that the number of RINs generated from the Ethanol Plant's inventory of finished Ethanol that makes up the Product Inventory matches the volume of finished Ethanol that makes up the Product Inventory (as determined pursuant to the measurement procedures herein). If there are any discrepancies between the number of RINs and

the final volume of finished Ethanol, Seller and Buyer shall resolve the discrepancy, which may include Seller acquisition of additional RINs if there is a shortfall.

4. Calculation of Inventories.

A. Product Inventory and WIP Inventory Quantity Report. Within 24 hours following the physical inventory of the Product Tanks and Storage Facilities, including the fermentation tanks, as it relates to WIP Inventory, members of the Inventory Committee will review and sign off on the Inspection Company's final calculations of the Product Inventory and WIP Inventory which shall be provided in a report that reflects the total measured amount of Product Inventory and WIP Inventory (such final calculations of Product Inventory shall be referred to as the "Product Quantity Report").

B. Chemical Inventory Amounts. At Closing, Seller shall provide or cause the Inspection Company to provide Buyer with the deemed quantity and quality of the Chemical Inventory, as determined in accordance with Section 3 B of this Exhibit.

C. Inventory Value. The value of the Inventories (the "Inventory Value" shall be calculated by multiplying (i) the quantities of the various Products comprising the Product Inventory and WIP Inventory measured pursuant to Annex I and reflected in the Product Inventory Quantity Report, or determined in accordance with Section 3 B of this Exhibit as it relates to the Chemical Inventory, by (ii) the relevant price formulas set forth in Annex II for such Products, WIP Inventory and/or Chemicals; plus the mark to market value associated with Commodity Contracts pursuant to Annex II.

D. Estimated Inventory Value. No later than three (3) Business Days prior to the Closing, Seller shall deliver to Buyer as part of the Estimated Net Working Capital Statement in accordance with Section 2.3(b) of the Agreement, a statement (the "Estimated Inventory Valuation Statement") setting forth Seller's reasonable good faith estimate of the Inventory Value as of the Closing Date, as determined in accordance with Seller's books and records and this Exhibit (the "Estimated Inventory Value"), together with supporting calculations and information used to determine the Estimated Inventory Value.

E. Product Inventory Quality Report. On or before fifteen (15) days following the Closing Date, Buyer shall cause the Inspection Company to provide the parties with a physical inventory report indicating the qualitative test results by tank or storage facility of the Product Inventory and WIP Inventory (the "Product Inventory Quality Report"). During the fifteen (15) day review period following receipt by Seller and Buyer of Product Inventory Quality Report, either Buyer or Seller may question the calculations and/or laboratory results set forth in Product Inventory Quality Report and the appropriate members of the Inventory Committee shall resolve any outstanding quality or quantity (as it specifically relates to quality valuation) disputes. At the end of such review period and following resolution of all quality and quantity (as it specifically relates to quality valuation) disputes, the quality and quantity (as it specifically relates to quality valuation) entries set forth in the adjusted (if any) Product Inventory Quality Report will become the official quality and quantity (as it specifically relates to quality valuation) measurements of the Product Inventory and WIP Inventory as of the Inventory Transfer Time. The quantity of Chemical Inventory as determined in accordance with Section 3 B hereof and the quantity of the Product Inventory as reflected in the Product Inventory Quantity Report, as may be adjusted based on the final Product Inventory Quality Report, will become the "Final Inventory Determination".

F. Inventory Purchase Price Adjustment. If the Final Inventory Determination reveals a quantity of Inventories that is less than or more than the Inventories reflected in the Product Inventory Quantity Report or calculated as part of the Estimated Inventory Value, the Inventory Value (calculated pursuant to Section 4 C hereof) shall be adjusted accordingly, based on the increased or decreased quantity of Inventories, as part of the Net Working Capital Adjustment. If the Final Inventory Determination requires a quality adjustment to the Inventory Value, such adjustment shall be made as part of the Net Working Capital Adjustment.

Annex I

Physical Inventory Measurement Procedures

A. Inventory Measurement Procedures for Product Inventory

1. Eligible Quantities. In determining the quantities of the various Products to be inventoried, all volumes and mass determinations shall be determined on the basis of the Inventory Transfer Time and as of the completion of delivery to or from the Ethanol Plant. Non-usable and non-merchantable quantities of Products and materials such as water and other foreign contaminants commonly referred to as sediment and water shall be excluded for purposes of determining the quantities of inventory.

2. Independent Inspection. All measurements and verifications involved in the inventory determination will be done by the Inspection Company with the participation of the Inventory Committee representatives. The Inventory Committee representatives shall have the right to participate in the physical inventory process by observing the measurements, verifications and other procedures. In addition, each of Buyer and Seller shall each have the right to have its own independent accountants, consultants, or agents present during the physical inventory, at each such party's sole cost and expense.

3. Measurement Protocol. All measurements, sampling and analyses related to the determination of quality and quantity of the Product Inventory shall be done in accordance with the latest versions of the API Manual of Petroleum Measurement Standards as published by the American Petroleum Institute (the "API Manual"), latest ASTM test methods as published by ASTM International, or by currently accepted industry standards or procedures. The specific standards to be used shall be determined by Buyer and Seller not less than three (3) Business Days prior to the Closing Date. All issues related to inventory measurements such as sampling, temperature readings, and gauging shall be resolved by the Inventory Committee to the best of its ability at the time the measurement is taken. Any disputes shall be resolved by noon the following working day (or in the case of quality disputes, promptly following receipt of analyses) by the Inventory Committee by majority vote, excluding the Inspection Company. The Inspection Company shall act as a subject matter expert in the discussion for the resolution of disputes.

4. Certification of Measurements and Laboratory. The Inspection Company will standardize, certify or validate, with proper documentation, all measurement equipment (gauging tapes, weigh scales, temperature devices) used in the inventory process. The Inspection Company will provide quality assurance documentation for its laboratory used for the physical inventory process. If an Ethanol Plant laboratory is utilized, the Inspection Company will review the Ethanol Plant laboratory's quality assurance program, including calibration documentation for all equipment used, for compliance and recommend corrections to non-compliant issues. All analyses conducted in the Ethanol Plant laboratory are to be witnessed by a qualified technician employed by the Inspection Company. The Parties may each have their Inventory Committee representative witness all analyses.

5. Acceptance and Review. The measurements of the Product Inventory and WIP Inventory shall be done at the agreed time by the Inventory Committee. Buyer and Seller shall be deemed to have accepted the accuracy of physical inventory of the Product Tanks and Storage Facilities as recorded by the Inspection Company at the time of the physical inventory and noted on a measurement sheet (the "Measurement Sheet") if the authorized representative of each of the parties "signs-off" on the Measurement Sheet.

6. Pre-Closing Inventory Procedures. Prior to the Inventory Transfer Time, Seller's personnel shall determine which tanks, silos or flat storage areas comprising the Product Tanks and Storage Facilities shall be active and inactive as of the Inventory Transfer Time. The aforementioned Inventory Schedule will take into account this determination and will provide for performing the physical inventory of both active and inactive storage tanks prior to the Inventory Transfer Time. Said Inventory Schedule will be subject to the approval of the Inventory Committee, and shall indicate the following for each tank, silo, or flat storage area to be inventoried:

(a) Storage tank location, tank number, and tank type;
(b) Tank strapping tables and tank drawings
(c) Status at Closing (active or inactive);
(d) Products stored;
(e) Tank gauge height;
(f) Tank calibration (ullage or innage); and
(g) Tank Heels (volume)

7. Physical Inventory Procedures

(a) General: Tanks with floating roofs shall have roofs outside critical zone when measurements are performed. Tank mixers shall be shut off at least two (2) hours prior to gauging. Silo augers will be shut off at least one (1) hour prior to gauging. Temperature measurements will be obtained at the time of gauging, except as otherwise provided herein. For any 190 proof and 200 proof ethanol tanks included as part of the Product Tanks and Storage Facilities side gauge and/or DCS reading through level transmitter shall be used. To the extent applicable, the Parties will cooperate to develop mutually reasonably acceptable procedures, including a cutoff time (e.g. six hours prior the Inventory Transfer Time) to suspend any receiving and shipping activity, to address measurement of Products that are in the midst of delivery to or from the Ethanol Plant as of the Inventory Transfer Time.

(b) Nonmoving Tanks (Inactive Tanks):

(i) All Product Tanks and Storage Facilities that are standing with no movement in or out as of the Inventory Transfer Time ("Inactive Tanks") will be measured, gauged and sampled prior to the Inventory Transfer Time in accordance with the Inventory Schedule. All valves in and out of the tank or silo will be closed and sealed at the time of gauging. The Inspection Company will seal the tank valves and will be responsible for recording seal numbers and checking of seals. If it is necessary to break seals to transfer

Products into or out of a sealed gauged tank, prior notification and confirmation must be obtained from the Inventory Committee in order to keep accurate records of the proceedings.

(ii) Once inventory measurement operations have started, no tank switching, changes or movements shall be made without notification to the Inventory Committee. If tank seals are broken, the impacted tanks must be resealed when movement stops. Each such affected tank must then be gauged, sampled and temperature determined anew. Otherwise, it will be gauged as an Active Tank (defined below).

(iii) Inactive Tanks that are required for thermal relief of connecting pipelines will be manually gauged and compared to the tank's automatic gauge reading. The automatic gauge will be confirmed as close to the Inventory Transfer Time as possible. The automatic gauge reading will be monitored every 10 minutes for 90 minutes before and after the transfer time to confirm that there was no movement into or out of said tank. In cases where the automatic gauge readings indicate tank movement, the tank will be gauged as an Active Tank.

(c) Moving Tanks (Active Tanks):

(i) Product Tanks and Storage Facilities that must have movements in or out ("Active Tanks") during the physical inventory quantification process as of the Inventory Transfer Time will be manually gauged during a period in which said tanks and facilities are temporarily inactive, as close to the Inventory Transfer Time as possible. The physical inventory of these tanks and facilities will be obtained using the applicable procedures prescribed herein and must coincide with the "closing" of rack meters where appropriate.

(ii) Each Active Tank that will remain active during the inventory period will be measured as close to the Inventory Transfer Time as possible. The gross inventory measurement will be compared against the Active Tank's automatic gauges. The volume difference between the two measurements, in gross inches or fractions thereof, will be recorded on the tank's physical inventory worksheet.

(d) WIP Inventory.

(i) For corn included in WIP – DCS readings (through level transmitter) shall be provided along with support lab data to determine percentage of the corn in WIP.

(ii) For any slurry, liquefaction and beerwell tanks, the Inventory Committee shall obtain DCS % full and capacity (including source for stated capacity)

(iii) For each fermenter tank, the Inventory Committee shall obtain DCS % full and capacity (including source for stated capacity), tank status of in process, filling or dropping, along with liquid solid %, fill level and drop level.

(e) Sampling, Testing and Retention of Samples:

(1) Inventory Schedule: The Inventory Committee shall finalize the Inventory Schedule within 5 days prior to the Closing Date. Sufficient sample amounts will be obtained to satisfy the quality requirements and retain volumes. At the Inventory Committee's discretion, during the inventory process sample requirements may change to reflect tank or product conditions observed at time of measurement.

(2) Ethanol and Natural Gasoline: A minimum of two running average samples (glass sample containers only) will be obtained per measured tank per ASTM D4057 (Standard Practice for Sampling of Petroleum and Petroleum Products). At the Inventory Committee's discretion and approval the amount/volume of sample obtained will be increased dependent on required laboratory analyses. Ethanol analysis to follow guidelines under ASTM D-4806-08.

(3) Corn: A minimum of two composite sample sets will be obtained per silo or storage area per industry standards. At the Inventory Committee's discretion and approval the amount/volume of sample obtained will be increased dependent on required laboratory analyses.

(4) Distillers Grains: A minimum of two composite sample sets will be obtained per silo or storage area per industry standards. At the Inventory Committee's discretion and approval the amount/volume of sample obtained will be increased dependent on required laboratory analyses.

(5) Quality Analyses: Besides the standard analyses needed for volume calculations (API gravity, water and sediment determinations) the analyses will reflect the applicable specifications as outlined in **Note 1 on Annex II**.

(6) Retention: All samples (used and unused) shall be sealed and retained. These sealed samples will be properly maintained by the Inspection Company for a period of ninety (90) days or a mutually agreed retention time. At the time of disposal, the Inspection Company will properly dispose of samples and appropriate "cradle to grave" documentation forwarded to the parties. All retained samples shall be made available to the parties three (3) Business Days after their respective requests to the Inspection Company.

(7) Measurement: All measurements taken during the physical inventory process will be performed by the Inspection Company. The following will be measured, recorded/obtained and documented by the

Inspection Company on the individual Measurement Sheet: (1) tank location, identification, and type, (2) date and time of measurements, (3) product type within tank, (4) manual gauge or weigh scale data recorded in appropriate units and fractional units, (5) measurement method, that is, innage or ullage or weigh scale, (6) temperature readings, (7) Free Water measurement recorded in appropriate units, and (8) the tanks automatic reading, and (9) seal numbers if tank valves are sealed.

8. Meter Readings – Loading Racks And Pipelines

(a) Inactive Systems. Meter readings shall be obtained on all inactive metered systems (tank truck rack and rail car rack) in advance of the Inventory Transfer Time. The Inspection Company will secure these systems by sealing same to ensure that no liquid Products are moved through these systems during the physical inventory process. The non-resetable total amount of product movements as indicated from the flow computers will be provided to and retained by Buyer, Seller and the Inspection Company.

(b) Active Systems: Meter readings shall be obtained on all active metered systems coincident with the physical inventory measurements obtained on the storage tank(s) by supplying said metered systems. The non-resetable total amount of product sales or other product transactions recorded through the flow computer of each meter will be provided to and retained by Buyer, Seller and the Inspection Company.

9. Post-Inventory Procedures. The Inventory Committee members and the Inspection Company representative shall sign the Measurement Sheet for each tank, silo or other storage facility inventoried, which shall include the calculation of gross observed volume or gross weight. Similarly, the Inventory Committee members shall identify and acknowledge all closing weigh scale and meter readings, as well as the last rack sale, Products shipments, and Products receipts prior to the physical inventory. An inspection shall be made to assure that all systems previously closed and sealed remained inactive during the physical inventory and that no product movements occurred through these systems. Any seals found to be broken during this inspection would subject that tank facility or system to be re-weighed or re- gauged. At this time all seals will be removed by the Inspection Company.

10. Calculation of Final Measured Product Inventory and WIP Inventory Quantity. The Inspection Company will tabulate the data from the signed individual tank Measurement Sheets and using current tank calibration tables will determine the total observed volume or mass for each of the Product Tanks and Storage Facilities (“Total Observed Volume or Mass”). Correcting for Free Water and other impurities, applying roof corrections, applying tank shell corrections, or other applicable and agreed corrections and using the most current CTL and CPL correction factors, the Total Observed Volumes and Mass will be corrected to Gross Standard Volumes and Mass and then to Net Standard Volumes and Mass. In the event calibration tables (as measured and calculated by an independent company in the tank calibration business) do not exist, the Product Inventory and WIP Inventory shall be calculated using the normal method in use at the Ethanol Plant. Once official calibration tables are available, the Product Inventory and WIP

Inventory shall be revised using these tables. All ethanol volumes shall be corrected to 60 degrees Fahrenheit using the most current versions of the RFS-2 for volume correction factors.

Annex II

Inventory Valuation

This Annex II sets forth the valuation formulae and procedures for valuing the Inventories in order to determine the Inventory Value.

The Commodity Contracts outlined in Schedule 1.1(q) of the Agreement will be brought to market as of the Closing Date using the valuation formulae outlined below and the adjustment to prices outlined in **Schedule 1**. As relates to corn contracts, within 5 days prior to the Closing Date, Buyer and Seller will determine appropriate basis levels for all future delivery period contracts. Parties agree that for any contract purchased or sold on a delivered basis that Buyer and Seller will use commercially reasonable estimates to determine the appropriate market price. In addition, the parties agree to cooperate in the exchange of corn futures information and positions.

Except as specifically set forth herein, the applicable price used to calculate the total value for each applicable portion of the Inventories will be based on a five (5) day wrap around the Inventory Transfer Time, as follows: two (2) days before, the day of, and two (2) days after the Inventory Transfer Time. If the Inventory Transfer Time falls on a Saturday, then the effective price for the prior Wednesday, Thursday and Friday and the following Monday and Tuesday will be used. If the Inventory Transfer Time falls on a Sunday, then the effective price for the prior Thursday and Friday and the following Monday, Tuesday and Wednesday will be used, so as to always use five (5) separate quotations. If a holiday should occur within the 5-day range, the holiday will be excluded and only a 4-day range will be used. To the extent this Annex II references a differential, such differential shall be based on the last trade prior to Closing.

All volumes of Product making up the Product Inventory and the WIP Inventory that do not meet the relevant quality specifications shall be subject to downward price adjustments in an amount to be determined by the Parties negotiating in good faith.

Inventory Component	**Pricing Methodology (Subject to required testing in Note 1)**
Ethanol	Chicago Ethanol OPIS Mean, plus applicable "Location Differential" as set forth in **Schedule 1**
Undenatured Ethanol	Ethanol price as determined above divided by 98% minus the product of Natural Gasoline as determined below multiplied by 2%
Corn Oil	Corn Chicago Board of Trade Soybean Oil Mean, plus applicable "Location Differential" as set forth in **Schedule 1**

Natural Gasoline	Natural Gasoline Conway OPIS Mean, plus applicable “Location Differential” as set forth in **Schedule 1**
Corn	Corn Chicago Board of Trade Mean, plus applicable “Location Differential” as set forth in **Schedule 1**
Dried Distillers Grains with Solubles	Corn value for the applicable Ethanol Plant as determined above multiplied by 2,000 divided by 56 multiplied by the applicable percentage as set forth in **Schedule 1**
Chemicals	All chemicals shall be valued at actual cost and supported by current vendor invoices to determine value that includes both unit price with unit of measure. Average price per chemical (units of measure) will be multiplied by the physical quantity confirmed through inspection process.
WIP Inventory	WIP Pricing is the same as the Corn price for “fermented corn bushels” multiplied by the quantified fermented corn bushels.

The price for Tank Heels shall be determined as follows:

Tank Heels:

Ethanol	Same price as Ethanol in Annex II
Natural Gasoline	Same price as Natural Gasoline in Annex II

Note 1

Specifications/Required Testing

Ethanol, except for Undenatured Ethanol	Ethanol vol % (ASTM D5501), Methanol vol % (ASTM D5501), Water Content vol % (ASTM E1064), Denaturant vol % (ASTM D5501), Appearance ASTM D4176, Specific Gravity (ASTM D4052), Inorganic Chloride (ASTM D7319), Sulfur ppm (ASTM D2622 or D5453), Acidity (ASTM D1613), Sulfate ppm (ASTM D7319)
Undentatured Ethanol	Specifications to be based on industry standards and mutually agreed upon by members of the Inventory Committee
Natural Gasoline	API ASTM D4052, Sulfur ppm mass (D2622 or D5453), Appearance ASTM D4176, Vapor Pressure RVP ASTM D5191
Corn	Weight (lbs/bu), Moisture, Foreign Material, Heat Damage, Damage, Weevils & Grain Insects
Corn Oil	Specifications to be based on industry standards and mutually agreed upon by members of the Inventory Committee
Wet Distillers Grains with Solubles	Moisture, Crude Protein, Crude Fat, Crude Fiber, Sulfur

Schedule 1

LOCATION DIFFERENTIALS

Note: "TBD" as used herein shall mean to be determined using the five (5) day wrap period referenced in this Annex II.

Ethanol

Location	Differential ($/Gal)
Hereford, TX	$(0.__)

Natural Gasoline

Location	Differential ($/Gal)
Hereford, TX	TBD

Corn Oil

Location	Differential ($/LB)
Hereford, TX	TBD

Corn

Location	Differential ($/Bu)
Hereford, TX	TBD

Wet Distillers Grain

Location	% Corn
Hereford, TX	TBD

Schedule 2

The type (grade) of each Chemical comprising the Chemical Inventory and the storage capacity of the tank/facility where the Chemical Inventory is stored or used is set forth on Schedule 2 in the Data Room for this transaction.

EXHIBIT C

EMPLOYMENT MATTERS

Section 1.1 Employment Offers to Active Employees.

(a) Buyer shall (or shall cause one of its Affiliates to), on or prior to the Closing Date, make an offer of employment to each Employee other than (i) those Employees who are on short-term disability leave and do not return to active employment within sixty (60) days after the Closing Date, or (ii) those Employees who are on long-term disability leave (collectively, "Leave"). Any such employment offers by Buyer will be subject to and contingent upon the occurrence of Closing. Seller agrees to allow Buyer reasonable access to all Employees who are to become Transferred Employees beginning after the Effective Date, to enable Buyer, at its option, to conduct informational and benefit enrollment meetings with the relevant Employees in anticipation of Closing. All Employees who accept employment with Buyer, pursuant to the offers described in this Section 1.1 are referred to herein as "Transferred Employees". The date on which a Transferred Employee commences active employment with Buyer or one of its Affiliates, as applicable, shall be the effective date of his or her employment with Buyer and is hereafter referred to as that Transferred Employee's "Transfer Date").

(b) Seller shall, promptly, but in no event later than ten (10) Business Days, after the Effective Date, provide Buyer with employment data, including the name, title, years of service, date of hire, current salary, hourly rate, wages, bonus and incentive opportunity, credited and unused vacation and/or sick pay, exempt or non-exempt status and the job grade of each Transferred Employee to, among other purposes, enable Buyer to input such persons into Buyer's payroll and other relevant computer systems in advance of Closing.

(c) Buyer shall offer Transferred Employees compensation and benefits comparable in the aggregate to the compensation and benefits provided by Seller (or its Affiliates) in their current employment.

(d) Buyer shall have no obligation with regard to former Employees who are retired, or who are not or shall have ceased to be Employees as of the Closing Date.

Section 1.2Service Credit. From and after the Closing Date, Buyer shall give the Transferred Employees credit for their service recognized by Seller or Seller's Affiliates prior to the Closing Date (as reflected in the employment data furnished to Buyer pursuant to Section 1.1(b)) for purposes of eligibility, vesting and benefit determination under all applicable plans and programs of Buyer as well as for purposes of determining any vacation eligibility under the Buyer's Benefit Plans.

Section 1.3 Vacation. Seller shall be responsible for paying the Transferred Employees for any vacation accrued but not used as of the Closing Date under the applicable vacation policy of Seller or Seller's Affiliates. From and after the Closing Date, Buyer shall provide all Transferred Employees with vacation in accordance with Buyer's or its Affiliate's vacation policy based upon the recognized credited service amounts, subject to proration from and after the Closing Date, of such Transferred Employees with Seller or Seller's Affiliates.

Section 1.4 Seller Obligations. Notwithstanding anything in this Agreement to the contrary, Seller shall be responsible for all such salaries and wages accruing prior to the Closing Date as well as for any Liabilities due to, or accrued by, Employees as of the Closing Date under the Seller's Benefit Plans, including earned or accrued vacation time, bonuses, incentive payments (including but not limited to the variable cash incentive program, retention bonus, special recognition awards, attendance awards, and special compensation pay for high work periods), and restricted stock units. Seller shall be responsible for any severance pay or benefits that accrue under any severance pay plan or policy of Seller or its Affiliates prior to the Closing with respect to each Employee, whether or not such Employee is also a Transferred Employee. Seller hereby retains as an Excluded Liability, all Liabilities or obligations arising out of or with respect to (i) the Transferred Employees' employment with, their benefits, or the termination of their employment from Seller or its Affiliates prior to the Closing; (ii) any employees formerly employed by Seller or its Affiliates, employment with, or the termination of their employment from Seller or its Affiliates prior to Closing; (iii) any and all employee related claims or grievances arising prior to the Closing; (iv) all Seller's Benefit Plans; and (v) to the extent relating to the period prior to Closing, the misclassification by Seller or its Affiliates of any Person providing services to the Ethanol Plant or to Seller or its Affiliates as an independent contractor or consultant where such classification by Seller or its Affiliates should have been as an Employee or former employee.

Section 1.5 WARN Act. Neither Seller nor Buyer will take or fail to take, any actions that would violate the provisions of the Worker Adjustment and Retraining Notification Act of 1988, as amended (the "WARN Act") or any similar state law (including the giving of notices as may be required to Governmental Authorities as well as affected Employees). Buyer shall be responsible for, and Buyer shall indemnify the Seller Indemnitees from and against all Losses arising out of the notification or other requirements of the WARN Act with respect to Transferred Employees on or after the Closing.

Section 1.6 Severance. In the event that the employment of any Transferred Employee is terminated by Buyer within twelve (12) months following the Closing Date, other than for violation of generally applicable policies of Buyer or its Affiliate, then the Buyer shall provide such Transferred Employee with severance pay and benefits available under any severance package that Buyer may make available to similarly situated employees of Buyer or its Affiliate.

Section 1.7 No Third Party Beneficiaries. No provision of this Exhibit C shall create any third-party beneficiary rights in any Person, including any employee or former employee (and any beneficiaries, dependents or representatives thereof) of Seller or Buyer or any of their respective Affiliates, and no provision of this Exhibit C shall create such third-party beneficiary rights in any Person in respect of any benefits that may be provided, directly or indirectly, under any Seller Plan or arrangement of Buyer, the Seller or its Affiliates, and nothing herein shall be construed as an amendment to any Seller Plan or arrangement.

Section 1.8 Workers' Compensation. Buyer's workers' compensation program shall be responsible for all claims for benefits that are based upon events occurring at or after the Transfer Date by participating Transferred Employees. Seller's workers' compensation program shall be responsible for all claims for benefits that are based upon events occurring prior to Transfer Date by participating Transferred Employees.

Section 1.9 Withholding. Buyer and Seller agree to comply with the Standard Procedure described in Section 4 of Revenue Procedure 2004-53, 2004 2 C.B. 320 (the "Standard Procedure"). Seller shall, in accordance with Revenue Procedure 2004-53, assume all responsibility for preparing and filing Form W-2, Wage and Tax Statements; Form W-3, Transmittal of Income and Tax Statements; Form 941, Employer's Quarterly Federal Tax Returns; Form W-4, Employee's Withholding Allowance Certificates; and Form W-5, Earned Income Credit Advance Payment Certificates (collectively, the "Employee Withholding Documents") with regard to wages paid to Transferred Employees through their respective Transfer Date. Buyer shall assume all responsibility for preparing and filing the Employee Withholding Documents with regard to wages paid to Transferred Employees after their respective Transfer Dates. Buyer and Seller shall cooperate in good faith to the extent necessary to permit each of them to comply with the Standard Procedure.

EXHIBIT D

TRANSITION SERVICES AGREEMENT

[attached]

EXHIBIT E-1

BUYER PARENT GUARANTY

GUARANTY AGREEMENT

THIS GUARANTY AGREEMENT (this "Agreement") is entered into as of ____________________________, 2020, by AgriAssets Holdings LLC, a Delaware limited liability company ("Guarantor"), for the benefit of Green Plains Hereford LLC ("Seller"). Terms used but not defined herein shall have the meanings assigned to them in the APA (as defined below).

RECITALS

A. Hereford Ethanol Partners, L.P., a Delaware limited partnership ("Obligor") has entered into that certain Asset Purchase Agreement dated as of _________________________, 2020 with Seller for the sale and purchase of the Purchased Assets comprising the Ethanol Plant (the "APA").

B. Obligor and Seller have entered into or will enter into the Transaction Documents.

C. As a condition precedent to Closing under the APA and the execution and delivery of the Transaction Documents, Seller requires the execution of this Agreement.

D. Guarantor, directly or indirectly, owns all of the equity interests in Obligor.

NOW THEREFORE, as a material inducement to Seller to enter into the APA and the Transaction Documents with Obligor, and in consideration of the foregoing Recitals, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Guarantor agrees as follows:

ARTICLE I
REPRESENTATIONS AND WARRANTIES OF GUARANTOR

Guarantor hereby represents and warrants to Seller as follows:

Section 1.1Organization and Qualification. Guarantor is a Delaware limited liability company duly organized, validly existing and in good standing under the laws of Delaware.

Section 1.2Due Authority. The execution, delivery and performance of this Agreement have been duly authorized by all necessary corporate action and do not violate, breach or contravene Guarantor's governing documents. This Agreement has been duly and validly executed and delivered by Guarantor and constitutes a legal, valid and binding obligation of Guarantor enforceable against Guarantor in accordance with its terms, except as enforcement may be limited by (i) applicable bankruptcy, insolvency, moratorium, reorganization, fraudulent conveyance and other similar laws affecting enforcement of creditors' rights generally and (ii) principles of equity affecting the availability of specific performance and other equitable remedies.

Section 1.3Solvency. There are no bankruptcy, insolvency, reorganization, receivership or similar procedures pending with respect to, being contemplated by or, to the knowledge of Guarantor, threatened against Guarantor. Guarantor is not insolvent and will not be rendered insolvent as a result of execution of this Agreement. Guarantor has the financial capacity to perform all of its obligations under this Agreement.

Section 1.4Consideration. Guarantor has received adequate consideration for entering into this Agreement, including the execution of the APA and the other Transaction Documents by Seller and Obligor, and the undertaking of the Obligations (as defined below) by Obligor.

ARTICLE II
GUARANTY OF OBLIGATIONS

Section 2.1 Guaranty.

(a) Subject to any rights, setoffs, counterclaims, and any other defenses that the Guarantor expressly reserves to itself under this Agreement, Guarantor hereby unconditionally, absolutely and irrevocably guarantees to Seller the due and punctual payment by Obligor of all amounts payable by Obligor under the APA and the other Transaction Documents (all such obligations, terms and provisions as now or hereafter in existence being collectively called the "Obligations"), whether according to the present terms thereof, or pursuant to any change in the terms, covenants and conditions thereof at any time hereafter made or granted, including pursuant to any amendments, extensions or renewals of the APA, the other Transaction Documents or the Obligations. Guarantor agrees and acknowledges that no amendment, extension or renewal of the APA, the other Transaction Documents or the Obligations will discharge or otherwise affect the liability of Guarantor under this Agreement. Guarantor shall not be liable hereunder for special, consequential, exemplary, tort or other damages except to the extent the same comprise Obligations.

(b) In the event that Obligor shall fail in any manner whatsoever to pay the Obligations, when and as the same shall be required to be paid under the terms of the APA or the other Transaction Documents, Guarantor will itself, in accordance with the terms of the APA or other Transaction Documents, duly and punctually pay such Obligations, or cause the same to be duly and punctually paid as if Guarantor were itself the obligor with respect to such Obligations under the APA or the other Transaction Documents, as applicable. All sums payable to Seller under this Agreement shall be paid within ten (10) Business Days after Seller's demand for payment is received, in immediately available funds in lawful money of the United States of America.

Section 2.2 No Demand or Notice.

(a) It shall not be a condition to the guarantees and agreements set forth in Section 2.1 (the "Guaranty") that Seller shall have first made any request of, or demand upon, or given any notice of the occurrence of a default under the APA or the other Transaction Documents (unless such notice is specifically required under the APA or the other Transaction Documents) or any other notice whatsoever to, Guarantor or Obligor or any other person, or shall have instituted

any action or proceeding against Obligor or any other person in respect thereof, or shall have joined Obligor in any such action or proceeding.

(b) Seller, in asserting the benefit of the Guaranty, shall give prompt notice to Guarantor of any failure by Obligor to pay, perform or observe any Obligation; provided, however, that any failure, delay (subject to applicable statutes of limitations) or defect in the giving of such notice shall not alter or affect the Guaranty under this Agreement.

Section 2.3 Waiver of Resort to Security. Guarantor further agrees that this Agreement constitutes a continuing guarantee of payment when due and not a guarantee of collection, and Guarantor waives any right to require as a condition to its Guaranty that any resort be had by Seller to any security held for the payment of any Obligation.

Section 2.4 No Discharge. The Guaranty is and shall remain absolute and unconditional irrespective of any circumstance that might otherwise constitute a legal or equitable discharge of a surety or guarantor, as the case may be, with respect to its Guaranty.

Section 2.5 Waivers by Guarantor.

(a) Guarantor hereby waives with respect to its Guaranty but without prejudice to the rights of the parties to the APA or the other Transaction Documents, any notice of acceptance of this Agreement by Seller, grace, presentment, demand, protest, notice of the occurrence of a default under the APA or the other Transaction Documents and any other notices of any kind whatsoever and promptness in making any claim or demand hereunder (subject to applicable statutes of limitations).

(b) The Guaranty shall not be affected by (i) any extension or modification of the APA, the other Transaction Documents or any agreement related to the foregoing, (ii) any rescission, waiver, amendment or modification of any of the terms or provisions of the APA, the other Transaction Documents or of any agreement related to the foregoing, including any change in the time, manner or place of payment or performance of any of the obligations under the APA or the other Transaction Documents or (iii) the release of any security held for payment of any Obligations.

Section 2.6 No Reduction. The Guaranty shall not be subject to any reduction, limitation, impairment or termination for any reason, including any claim of waiver, release, surrender, alteration or compromise, and shall not be subject to any defense or set-off, counterclaim, recoupment or termination whatsoever, except as provided in Section 2.9.

Section 2.7 Enforcement. Notwithstanding anything herein to the contrary, Seller may proceed to enforce the Guaranty against Guarantor without first pursuing or exhausting any right or remedy that Seller or any of its successors or assigns may have against Obligor or any other Person.

Section 2.8 Continued Effectiveness. The Guaranty shall continue to be effective or be reinstated, as the case may be, if at any time payment, or any part thereof, of any Obligation of Obligor is rescinded or must otherwise be restored or returned by the Person receiving such

payment upon the insolvency, bankruptcy or reorganization of Obligor, all as though such payment or part thereof had not been made.

Section 2.9 Certain Defenses. Nothing herein is intended to deny to Guarantor, and it is expressly agreed that Guarantor shall have and may assert, any and all the defenses, set-offs, counterclaims and other rights (other than those relating to insolvency, bankruptcy or reorganization as described in Section 2.8) with regard to any Obligation that Obligor may possess except as set forth herein or any other defense Obligor may possess relating to lack of validity or enforceability of the APA, the other Transaction Documents or any other agreement or instrument relating to the foregoing as against Obligor arising from (a) the defective incorporation or other defective organization of Obligor, (b) Obligor's lack of qualification to do business in any applicable jurisdiction or (c) Obligor's defective corporate or other organizational authority to enter into, deliver or perform the APA or any other Transaction Documents.

ARTICLE III
MISCELLANEOUS

Section 3.1 Governing Law. THIS AGREEMENT SHALL BE CONSTRUED (BOTH AS TO VALIDITY AND PERFORMANCE), INTERPRETED AND ENFORCED IN ACCORDANCE WITH, AND GOVERNED BY, THE LAWS OF THE STATE OF DELAWARE, WITHOUT REGARD TO CONFLICTS OF LAWS RULES AS APPLIED IN NEW YORK.

Section 3.2 Jurisdiction; Consent to Service of Process; Waiver. Guarantor and Seller each agrees that it shall bring any action or proceeding in respect of any claim arising out of or related to this Agreement, whether in tort or contract or at law or in equity, exclusively in any Federal or state court in the City of Wilmington, Delaware and solely in connection with claims arising under such agreement or instrument or the transactions contained in or contemplated by such agreement or instrument, (a) irrevocably submits to the exclusive jurisdiction of such courts, (b) waives any objection to laying venue in any such action or proceeding in such courts, and (c) waives any objection that such courts are an inconvenient forum or do not have jurisdiction over it. Guarantor and Seller each hereby knowingly and intentionally, irrevocably and unconditionally waives trial by jury in any legal action or proceeding relating to this Agreement and for any counterclaim therein.

Section 3.3 Construction. Whenever the context requires, the gender of all words used in this Agreement includes the masculine, feminine and neuter. Terms defined in the singular have the corresponding meanings in the plural, and vice versa. All references to Articles and Sections refer to articles and sections of this Agreement. The word "including" means "including, but not limited to". The words "hereof," "hereby," "herein," "hereunder" and similar terms in this Agreement shall refer to this Agreement as a whole and not any particular section or article in which such words appear. Any reference to a statute, regulation or law shall include any amendment thereof or any successor thereto and any rules and regulations promulgated thereunder, all as in effect as of the date hereof. Reference to any Person includes such Person's successors and permitted assigns. Whenever this Agreement refers to a number of days, such number shall refer to calendar days unless Business Days are specified.

Section 3.4 Amendment. This Agreement may not be amended except by an instrument in writing executed and delivered by Guarantor and Seller.

Section 3.5 Notices. All notices and other communications that are required to be or may be given pursuant to this Agreement shall be in writing and shall be deemed to have been duly given if delivered in person or by a recognized international courier service (such as Federal Express or UPS), via facsimile or electronic transmission, or mailed by registered or certified mail (postage prepaid, return receipt requested) to the relevant party hereto at the following addresses or sent by facsimile or electronic transmission to the following numbers:

If to Guarantor, to:

AgriAssets Holdings LLC

4514 Cole Avenue, Suite 1175

Dallas, Texas 75205

Attn: Chief Executive Officer

Telephone: (806) 374-1811

Facsimile Number: (806) 374-3003

Email: dgales@frionaindustries.com

If to Seller, to:

Green Plains Inc.

1811 Aksarben Drive

Omaha, NE 68106

Attn: Chief Legal & Administration Officer

Telephone: (402) 315-1629

Facsimile: (402) 952-4916

Email: michelle.mapes@gpreinc.com

or to such other address or facsimile number or email address as Guarantor or Seller may, from time to time, designate in a written notice given in accordance with this Section 3.5. Any such notice or communication shall be effective (a) if delivered in person or by courier, upon actual receipt by the intended recipient, (b) if sent by facsimile transmission or electronic transmission (e.g., "pdf"), upon actual receipt if received during the recipient's normal business hours, or at the beginning of the recipient's next Business Day after receipt if not received during recipient's normal business hours, or (c) if mailed, upon the earlier of five (5) days after deposit in the mail or the date of delivery shall be as shown by the return receipt therefor.

Section 3.6Public Announcements. Neither Guarantor nor Seller will issue or make any press releases or similar public announcements concerning the Guaranty or this Agreement without the prior written consent of the other Party hereto, except as may be required by Law. In the event that it is required by Law to make a disclosure concerning this Agreement such party shall use diligent efforts to first notify the other Party hereto before making such disclosure.

Section 3.7Expenses. Except as otherwise expressly provided herein, all costs and expenses incurred by Guarantor in connection with this Agreement shall be paid by Guarantor,

and all costs and expenses incurred by Seller in connection with this Agreement shall be paid by Seller.

Section 3.8Headings. The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

Section 3.9Severability. If any term or other provision of this Agreement is invalid, illegal or incapable of being enforced by any rule of Law or public policy, all other conditions and provisions of this Agreement shall nevertheless remain in full force and effect, and the invalid, illegal or unenforceable provision shall be reformed to the minimum extent required to render such provision valid, legal and enforceable and in a manner so as to preserve the economic and legal substance of the transactions contemplated hereby to the fullest extent permitted by Law. Upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the parties hereto shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties hereto as closely as possible in an acceptable manner to the end that the Guaranty contemplated hereby is fulfilled to the extent possible.

Section 3.10Assignment. This Agreement shall not be assigned by Guarantor or Seller (including by operation of law or otherwise), except in connection with an assignment permitted under the APA or the other Transaction Documents. Any purported assignment of this Agreement in violation of this Section 3.10 shall be null and void.

Section 3.11Parties in Interest. This Agreement shall be binding upon and inure solely to the benefit of Seller and its permitted successors and assigns, and nothing in this Agreement, express or implied, is intended to or shall confer upon any other Person any right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

Section 3.12Counterparts. This Agreement may be executed in multiple counterparts and by Guarantor and Seller in separate counterparts, each of which when executed shall be deemed to be an original but all of which taken together shall constitute one and the same agreement. Signed counterparts of this Agreement delivered via facsimile or emailed as portable document format (PDF) attachments shall have the same binding effect as originals; provided that each party hereto uses commercially reasonable efforts to deliver to the other party hereto original signatures as soon as possible thereafter.

Section 3.13Entire Agreement. This Agreement, the APA and the other Transaction Documents constitute the entire agreement of Guarantor and Seller with respect to the subject matter hereof, and supersede all prior agreements and undertakings, both written and oral, between Guarantor and Seller with respect to the subject matter hereof.

Section 3.14No Third Party Beneficiary. This Guaranty is given by Guarantor solely for the benefit of Seller and its successors and permitted assigns, and is not to be relied upon by any other Person or entity.

Section 3.15Term of Guaranty.This Guaranty Agreement shall continue in effect until all Obligations have been satisfied.

[the following page is the execution page]

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be executed as of the date first written above by their respective officers thereunto duly authorized.

GUARANTOR:

AGRIASSET HOLDINGS LLC

By: ________________________________

Name: ________________________________

Title: ________________________________

ACCEPTED:

GREEN PLAINS HEREFORD LLC

By: ________________________________

Name: ________________________________

Title: ________________________________

EXHIBIT E-2

SELLER PARENT GUARANTY

GUARANTY AGREEMENT

THIS GUARANTY AGREEMENT (this "Agreement") is entered into as of ____________________________, 2020, by GREEN PLAINS INC., an Iowa corporation ("Guarantor"), for the benefit of Hereford Ethanol Partners, L.P. ("Buyer"). Terms used but not defined herein shall have the meanings assigned to them in the APA (as defined below).

RECITALS

A. GREEN PLAINS HEREFORD LLC ("Obligor") has entered into that certain Asset Purchase Agreement dated as of ________________________, 2020 with Buyer for the sale and purchase of the Purchased Assets comprising the Ethanol Plant (the "APA").

B. Obligor and Buyer have entered into or will enter into the Transaction Documents.

C. As a condition precedent to Closing under the APA and the execution and delivery of the Transaction Documents, Buyer requires the execution of this Agreement.

D. Guarantor, directly or indirectly, owns all of the equity interests in Obligor.

NOW THEREFORE, as a material inducement to Buyer to enter into the APA and the Transaction Documents with Obligor, and in consideration of the foregoing Recitals, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Guarantor agrees as follows:

ARTICLE I
REPRESENTATIONS AND WARRANTIES OF GUARANTOR

Guarantor hereby represents and warrants to Buyer as follows:

Section 1.1Organization and Qualification. Guarantor is an Iowa corporation, duly organized, validly existing and in good standing under the laws of Iowa.

Section 1.2Due Authority. The execution, delivery and performance of this Agreement have been duly authorized by all necessary corporate action and do not violate, breach or contravene Guarantor's governing documents. This Agreement has been duly and validly executed and delivered by Guarantor and constitutes a legal, valid and binding obligation of Guarantor enforceable against Guarantor in accordance with its terms, except as enforcement may be limited by (i) applicable bankruptcy, insolvency, moratorium, reorganization, fraudulent conveyance and other similar laws affecting enforcement of creditors' rights generally and (ii) principles of equity affecting the availability of specific performance and other equitable remedies.

Section 1.3Solvency. There are no bankruptcy, insolvency, reorganization, receivership or similar procedures pending with respect to, being contemplated by or, to the

knowledge of Guarantor, threatened against Guarantor. Guarantor is not insolvent and will not be rendered insolvent as a result of execution of this Agreement. Guarantor has the financial capacity to perform all of its obligations under this Agreement.

Section 1.4Consideration. Guarantor has received adequate consideration for entering into this Agreement, including the execution of the APA and the other Transaction Documents by Buyer and Obligor, and the undertaking of the Obligations (as defined below) by Obligor.

ARTICLE II
GUARANTY OF OBLIGATIONS

Section 2.1Guaranty.

(a) Subject to any rights, setoffs, counterclaims, and any other defenses that the Guarantor expressly reserves to itself under this Agreement, Guarantor hereby unconditionally, absolutely and irrevocably guarantees to Buyer the due and punctual payment by Obligor of all amounts payable by Obligor under the APA and the other Transaction Documents (all such obligations, terms and provisions as now or hereafter in existence being collectively called the "Obligations"), whether according to the present terms thereof, or pursuant to any change in the terms, covenants and conditions thereof at any time hereafter made or granted, including pursuant to any amendments, extensions or renewals of the APA, the other Transaction Documents or the Obligations. Guarantor agrees and acknowledges that no amendment, extension or renewal of the APA, the other Transaction Documents or the Obligations will discharge or otherwise affect the liability of Guarantor under this Agreement. Guarantor shall not be liable hereunder for special, consequential, exemplary, tort or other damages except to the extent the same comprise Obligations.

(b) In the event that Obligor shall fail in any manner whatsoever to pay the Obligations, when and as the same shall be required to be paid under the terms of the APA or the other Transaction Documents, Guarantor will itself, in accordance with the terms of the APA or other Transaction Documents, duly and punctually pay such Obligations, or cause the same to be duly and punctually paid as if Guarantor were itself the obligor with respect to such Obligations under the APA or the other Transaction Documents, as applicable. All sums payable to Buyer under this Agreement shall be paid within ten (10) Business Days after Buyer's demand for payment is received, in immediately available funds in lawful money of the United States of America.

Section 2.2No Demand or Notice.

(a) It shall not be a condition to the guarantees and agreements set forth in Section 2.1 (the "Guaranty") that Buyer shall have first made any request of, or demand upon, or given any notice of the occurrence of a default under the APA or the other Transaction Documents (unless such notice is specifically required under the APA or the other Transaction Documents) or any other notice whatsoever to, Guarantor or Obligor or any other Person, or shall have instituted any action or proceeding against Obligor or any other Person in respect thereof, or shall have joined Obligor in any such action or proceeding.

(b) Buyer, in asserting the benefit of the Guaranty, shall give prompt notice to Guarantor of any failure by Obligor to pay, perform or observe any Obligation; provided, however, that any failure, delay (subject to applicable statutes of limitations) or defect in the giving of such notice shall not alter or affect the Guaranty under this Agreement.

Section 2.3 Waiver of Resort to Security. Guarantor further agrees that this Agreement constitutes a continuing guarantee of payment when due and not a guarantee of collection, and Guarantor waives any right to require as a condition to its Guaranty that any resort be had by Buyer to any security held for the payment of any Obligation.

Section 2.4 No Discharge. The Guaranty is and shall remain absolute and unconditional irrespective of any circumstance that might otherwise constitute a legal or equitable discharge of a surety or guarantor, as the case may be, with respect to its Guaranty.

Section 2.5 Waivers by Guarantor.

(a) Guarantor hereby waives with respect to its Guaranty but without prejudice to the rights of the parties to the APA or the other Transaction Documents, any notice of acceptance of this Agreement by Buyer, grace, presentment, demand, protest, notice of the occurrence of a default under the APA or the other Transaction Documents and any other notices of any kind whatsoever and promptness in making any claim or demand hereunder (subject to applicable statutes of limitations).

(b) The Guaranty shall not be affected by (i) any extension or modification of the APA, the other Transaction Documents or any agreement related to the foregoing, (ii) any rescission, waiver, amendment or modification of any of the terms or provisions of the APA, the other Transaction Documents or of any agreement related to the foregoing, including any change in the time, manner or place of payment or performance of any of the obligations under the APA or the other Transaction Documents or (iii) the release of any security held for payment of any Obligations.

Section 2.6 No Reduction. The Guaranty shall not be subject to any reduction, limitation, impairment or termination for any reason, including any claim of waiver, release, surrender, alteration or compromise, and shall not be subject to any defense or set-off, counterclaim, recoupment or termination whatsoever, except as provided in Section 2.9.

Section 2.7 Enforcement. Notwithstanding anything herein to the contrary, Buyer may proceed to enforce the Guaranty against Guarantor without first pursuing or exhausting any right or remedy that Buyer or any of its successors or assigns may have against Obligor or any other Person.

Section 2.8 Continued Effectiveness. The Guaranty shall continue to be effective or be reinstated, as the case may be, if at any time payment, or any part thereof, of any Obligation of Obligor is rescinded or must otherwise be restored or returned by the Person receiving such payment upon the insolvency, bankruptcy or reorganization of Obligor, all as though such payment or part thereof had not been made.

Section 2.9Certain Defenses. Nothing herein is intended to deny to Guarantor, and it is expressly agreed that Guarantor shall have and may assert, any and all the defenses, set-offs, counterclaims and other rights (other than those relating to insolvency, bankruptcy or reorganization as described in Section 2.8) with regard to any Obligation that Obligor may possess except as set forth herein or any other defense Obligor may possess relating to lack of validity or enforceability of the APA, the other Transaction Documents or any other agreement or instrument relating to the foregoing as against Obligor arising from (a) the defective incorporation or other defective organization of Obligor, (b) Obligor's lack of qualification to do business in any applicable jurisdiction or (c) Obligor's defective corporate or other organizational authority to enter into, deliver or perform the APA or any other Transaction Documents.

ARTICLE III
MISCELLANEOUS

Section 3.1Governing Law. THIS AGREEMENT SHALL BE CONSTRUED (BOTH AS TO VALIDITY AND PERFORMANCE), INTERPRETED AND ENFORCED IN ACCORDANCE WITH, AND GOVERNED BY, THE LAWS OF THE STATE OF DELAWARE, WITHOUT REGARD TO CONFLICTS OF LAWS RULES AS APPLIED IN DELAWARE.

Section 3.2Jurisdiction; Consent to Service of Process; Waiver. Guarantor and Buyer each agrees that it shall bring any action or proceeding in respect of any claim arising out of or related to this Agreement, whether in tort or contract or at law or in equity, exclusively in any Federal or state court in the City of Wilmington, Delaware and solely in connection with claims arising under such agreement or instrument or the transactions contained in or contemplated by such agreement or instrument, (a) irrevocably submits to the exclusive jurisdiction of such courts, (b) waives any objection to laying venue in any such action or proceeding in such courts, and (c) waives any objection that such courts are an inconvenient forum or do not have jurisdiction over it. Guarantor and Buyer each hereby knowingly and intentionally, irrevocably and unconditionally waives trial by jury in any legal action or proceeding relating to this Agreement and for any counterclaim therein.

Section 3.3Construction. Whenever the context requires, the gender of all words used in this Agreement includes the masculine, feminine and neuter. Terms defined in the singular have the corresponding meanings in the plural, and vice versa. All references to Articles and Sections refer to articles and sections of this Agreement. The word "including" means "including, but not limited to". The words "hereof," "hereby," "herein," "hereunder" and similar terms in this Agreement shall refer to this Agreement as a whole and not any particular section or article in which such words appear. Any reference to a statute, regulation or law shall include any amendment thereof or any successor thereto and any rules and regulations promulgated thereunder, all as in effect as of the date hereof. Reference to any Person includes such Person's permitted successors and assigns. Whenever this Agreement refers to a number of days, such number shall refer to calendar days unless Business Days are specified.

Section 3.4Amendment. This Agreement may not be amended except by an instrument in writing executed and delivered by Guarantor and Buyer.

Section 3.5Notices. All notices and other communications that are required to be or may be given pursuant to this Agreement shall be in writing and shall be deemed to have been duly given if delivered in person or by a recognized international courier service (such as Federal Express or UPS), via facsimile or electronic transmission, or mailed by registered or certified mail (postage prepaid, return receipt requested) to the relevant party hereto at the following addresses or sent by facsimile or electronic transmission to the following numbers:

If to Guarantor, to:

Green Plains Inc.

1811 Aksarben Drive

Omaha, NE 68106

Attn: Chief Legal & Administration Officer

Telephone: (402) 315-1629

Facsimile: (402) 952-4916

Email: michelle.mapes@gpreinc.com

If to Buyer, to:

Hereford Ethanol Partners, L.P.

4514 Cole Avenue, Suite 1175

Dallas, Texas 75205

Attn: Chief Executive Officer

Telephone: (806) 374-1811

Facsimile Number: (806) 374-3003

Email: dgales@frionaindustries.com

or to such other address or facsimile number or email address as Guarantor or Seller may, from time to time, designate in a written notice given in accordance with this Section 3.5. Any such notice or communication shall be effective (a) if delivered in person or by courier, upon actual receipt by the intended recipient, (b) if sent by facsimile transmission or electronic transmission (e.g., “pdf”), upon actual receipt if received during the recipient’s normal business hours, or at the beginning of the recipient’s next Business Day after receipt if not received during recipient’s normal business hours, or (c) if mailed, upon the earlier of five (5) days after deposit in the mail or the date of delivery shall be as shown by the return receipt therefor.

Section 3.6Public Announcements. Neither Guarantor nor Buyer will issue or make any press releases or similar public announcements concerning the Guaranty or this Agreement without the prior written consent of the other Party hereto, except as may be required by Law. In the event that it is required by Law to make a disclosure concerning this Agreement such party shall use diligent efforts to first notify the other Party hereto before making such disclosure.

Section 3.7Expenses. Except as otherwise expressly provided herein, all costs and expenses incurred by Guarantor in connection with this Agreement shall be paid by Guarantor, and all costs and expenses incurred by Buyer in connection with this Agreement shall be paid by Buyer.

Section 3.8 Headings. The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

Section 3.9 Severability. If any term or other provision of this Agreement is invalid, illegal or incapable of being enforced by any rule of Law or public policy, all other conditions and provisions of this Agreement shall nevertheless remain in full force and effect, and the invalid, illegal or unenforceable provision shall be reformed to the minimum extent required to render such provision valid, legal and enforceable and in a manner so as to preserve the economic and legal substance of the transactions contemplated hereby to the fullest extent permitted by Law. Upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the parties hereto shall negotiate in good faith to modify this Agreement so as to effect the original intent of the parties hereto as closely as possible in an acceptable manner to the end that the Guaranty contemplated hereby is fulfilled to the extent possible.

Section 3.10 Assignment. This Agreement shall not be assigned by Guarantor or Buyer (including by operation of law or otherwise), except in connection with an assignment permitted under the APA or the other Transaction Documents. Any purported assignment of this Agreement in violation of this Section 3.10 shall be null and void.

Section 3.11 Parties in Interest. This Agreement shall be binding upon and inure solely to the benefit of Buyer and its permitted successors and assigns, and nothing in this Agreement, express or implied, is intended to or shall confer upon any other Person any right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

Section 3.12 Counterparts. This Agreement may be executed in multiple counterparts and by Guarantor and Buyer in separate counterparts, each of which when executed shall be deemed to be an original but all of which taken together shall constitute one and the same agreement. Signed counterparts of this Agreement delivered via facsimile or emailed as portable document format (PDF) attachments shall have the same binding effect as originals; provided that each party hereto uses commercially reasonable efforts to deliver to the other Party hereto original signatures as soon as possible thereafter.

Section 3.13 Entire Agreement. This Agreement, the APA and the other Transaction Documents constitute the entire agreement of Guarantor and Buyer with respect to the subject matter hereof, and supersede all prior agreements and undertakings, both written and oral, between Guarantor and Buyer with respect to the subject matter hereof.

Section 3.14 No Third Party Beneficiary. This Guaranty is given by Guarantor solely for the benefit of Buyer and its permitted successors and assigns, and is not to be relied upon by any other Person or entity.

Section 3.15 Term of Guaranty. This Guaranty Agreement shall continue in effect until all Obligations have been satisfied.

[the following page is the execution page]

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be executed as of the date first written above by their respective officers thereunto duly authorized.

GUARANTOR:

GREEN PLAINS INC.

By: ______________________________
Name: ______________________________
Title: ______________________________

ACCEPTED:

HEREFORD ETHANOL PARTNERS, L.P.

By: Hereford Ethanol LLC, its general partner

By: ______________________________
Name: ______________________________
Title: ______________________________

EXHIBIT F

CCS NOTE

THE OFFER AND SALE OF THIS NOTE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND SUCH MAY NOT BE SOLD OR TRANSFERRED UNLESS SUCH SALE OR TRANSFER IS IN ACCORDANCE WITH THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT OF 1933, AS AMENDED, OR IN CONFORMITY WITH THE LIMITATIONS OF RULE 144 OR SIMILAR RULE AS THEN IN EFFECT UNDER SUCH ACT, OR UNLESS SOME OTHER EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF SUCH ACT IS AVAILABLE WITH RESPECT THERETO.

CCS PROMISSORY NOTE

Dallas, Texas December __, 2020

For value received, Hereford Ethanol Partners, L.P., a Delaware limited partnership (“Maker”), hereby promises to pay to Green Plains Hereford LLC, a Delaware limited partnership (“Payee”), at 1811 Aksarben Drive, Omaha, NE 68106 (or such other place as the holder hereof may hereafter designate in writing), in accordance with the terms hereinafter provided, the greater of (a) the CCS Payments (as defined below) or, (b) the principal amount of up to Twenty Million U.S. Dollars ($20,000,000.00), as further specified below, together with interest on all past due amounts from the respective due dates thereof until paid at the Past Due Rate.

Pursuant to that certain Asset Purchase Agreement (herein so called) effective December 11, 2020, Maker, as buyer, agreed to purchase from Payee, as seller, certain real property and tangible and intangible assets used in the business of producing, marketing and selling ethanol and its co-products, including, without limitation, the Ethanol Plant (as defined in the Asset Purchase Agreement). This is the “CCS Note” issued and delivered by Maker pursuant to Section 2.1(c) of the Asset Purchase Agreement. Capitalized terms used and not otherwise defined in this note have the meanings ascribed to them in the Asset Purchase Agreement.

No provision of this note shall (i) make Maker liable to Payee for any changes imposed by state or federal laws, regulations, practices or policies, including, without limitation, Carbon Credits, carbon exchanges or any related tax or other laws regulations, practices or policies that result in a reduction or elimination of any payments hereunder, or (ii) create any liability of Maker to Seller for failing to consummate a CCS Transaction, if and to the extent, that consummation of any such CCS Transaction would otherwise be uneconomical in the commercially reasonable judgment of Maker.

1. Definitions. As used in this note, the following terms shall have the respective meanings indicated:

(a) "Affiliate" means, with respect to a specified Person, a Person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the Person specified. As used herein, the term "control" means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through ownership of voting securities or interests, by contract, or otherwise.

(b) "AgriAsset Holdings" refers to AgriAsset Holdings LLC, a Delaware limited liability company and parent of Maker.

(c) "Carbon Value" means the dollar amount at which carbon is sold in the California LCFS or an alternative LCFS market, quoted in values per ton and per point per gallon of ethanol. As of the date hereof, California is assumed to be the best market for carbon value; however future policy may provide alternative markets for Maker that are superior to the California market from a value perspective.

(d) "Change of Control" means (x) the acquisition of Maker by another Person (other than an Affiliate of Maker) by means of any transaction or series of related transactions to which Maker is a party (including, without limitation, any equity security acquisition, reorganization, merger or consolidation but excluding any sale of equity securities for capital raising purposes) as a result of which the holders of the voting securities of Maker outstanding immediately prior to such transaction cease to own at least 50% of the total voting power represented by the voting securities of Maker outstanding immediately after such transaction or series of transactions; or (y) a sale, lease or other conveyance of all substantially all of the assets of Maker.

(e) "CCS" refers to carbon capture and sequestration.

(f) "CCS Credits" during a quarter means all credits or monies received or accruing to Maker during such quarter from any counterparty or any state or federal agency with respect to carbon capture and sequestration in connection with shipments of ethanol from the Ethanol Plant, including, without limitation, the value of any associated tax programs, inclusive carbon related tax credits, deductions or rebates related to carbon capture credits, carbon intensity scores or carbon sequestration, that are monetized through the sale of ethanol from the Ethanol Plant.

(g) "CCS Transaction" refers to an agreement with a JV Partner who will capture CO^2 from the CO^2 scrubbers at the Ethanol Plant, and clean, dehydrate and compress the CO^2 to be utilized in a United States Environmental Protection Agency and California Air Resources Board-approved enhanced oil recovery and sequestration project.

(h) "Corn Cost" means the Chicago Board of Trade value of corn for the nearby futures month plus average basis between the daily quoted bid and offer delivered Hereford, Texas.

(i) "Corn Oil Value" means the value of corn oil at the Ethanol Plant, FOB Hereford, Texas.

(j) "EBITDA" for a period means an amount determined in accordance with GAAP equal to net income from continuing operations for such period, excluding Net CCS Benefits, plus (a) cash interest expense, (b) income taxes, (c) depreciation and amortization for such period (to the extent deducted in determining earnings from continuing operations for such period), (d) amortization of intangibles (including, without limitation, goodwill, financing fees and other capitalized costs), to the extent not otherwise included in clause (c) above, other non-cash charges

and organization costs, (e) extraordinary losses in accordance with GAAP, and (f) any other item Maker and Payee mutually deem to be appropriate.

(k) "Ethanol Value" means the landed value of ethanol in the California market as quoted by the LA OPIS Ethanol Index (or other agreed to index) exclusive of LCFS value, less freight from the Ethanol Plant to Los Angeles.

(l) "Event of Default" has the meaning ascribed to it in Section 5.

(m) "GAAP" means generally accepted accounting principles as in effect from time to time in the United States.

(n) "Gross CCS Benefit" refers to the number of gallons of ethanol shipped during a quarter multiplied by the CCS Credits received or accrued by Maker that are ascribed to the sale of ethanol shipped by Maker as a result of the LCFS program in the California market (or an alternative LCFS market to be determined and mutually agreed between Maker and Payee) before deducting any amounts due to the JV Partner.

(o) "Issuance Date" means December ___, 2020.

(p) "JV Partner" refers to the yet-to-be-named joint venture partner of Maker with respect to a CCS Transaction.

(q) "JV Partner Share" means the amount of the CCS Benefit due and owing to the JV Partner during any quarter pursuant to the CCS Transaction.

(r) "LCFS" means Low Carbon Fuel Standard.

(s) "Maker" means Hereford Ethanol Partners, L.P., a Delaware limited partnership.

(t) "Measurement Period" refers to the 40 quarters commencing on the Commencement Date; pursuant to Section 2(d), the Measurement Period may be extended.

(u) "Negative EBITDA" during any quarter means EBITDA that is a negative number; in calculating net income from continuing operations for purposes of Negative EBITDA, Negative EBITDA in a given quarter shall be computed by taking the breakeven using Ethanol Value, plus WDGS value, plus Corn Oil Value, less delivered Corn Cost, less natural gas cost, less OPEX Value, less selling, general and administrative expense for the Ethanol Plant.

(v) "Net CCS Benefit" during any quarter means Gross CCS Benefit less the JV Partner Share accruing with respect to shipments of ethanol made during such quarter.

(w) "OPEX Value" means the costs Maker incurs for the day-to-day operation of the Ethanol Plant, expressed as cost per gallon of ethanol produced at the Ethanol Plant running at full rated capacity (90 MGPY) for the prior rolling 6-month period. Items included in the OPEX Value are attached hereto as Exhibit A.

(x) "Past Due Rate" means the 5.00% per annum. .

(y) "Payee" means Green Plains Hereford LLC, and any other permitted holder or holders of this note from time to time and, upon acquisition of this note by any permitted holder or

holders other than the named payee, effective as of the time of such acquisition, the term "Payee" shall mean all of the then permitted holders of this note, to the exclusion of all prior holders not then retaining or reserving an interest in this note, to the end that all the rights, powers, remedies, liens, benefits and privileges accruing and to accrue hereunder to Payee, as such term is used herein, shall inure to the benefit of and be owned and held by the permitted holder or holders of this note from time to time, whether such holder acquires this note through succession to or assignment from a prior Payee.

(z) "Person" means any individual, corporation, partnership, joint venture, association, joint-stock company, trust, limited liability company, unincorporated organization or any other entity.

(aa) "Term" refers to the term of the note, which shall be 40 calendar quarters from the occurrence of the Commencement Date, subject to extension due to the Ethanol Plant not operating during any quarter during the Measurement Period, as provided in Section 2(d)(ii).

(bb) "WDGS value" means the value of wet distillers grains with solubles, FOB Hereford, Texas.

2. CCS Payments.

(a) Payout Value. The CCS Payments made to Payee for any calendar quarter shall be calculated by multiplying 27.5% times the Net CCS Benefit during such quarter (the "CCS Payments"). Payee acknowledges that the Carbon Value of ethanol in the LCFS market will vary depending on the price of carbon credits sold in the LCFS market.

(b) Commencement of Payments. CCS Payments shall commence following (i) the execution and delivery of an agreement between Maker and the JV Partner with respect to the CCS Transaction, and (ii) the start-up of commercial CCS operations at the Ethanol Plant following construction of carbon capture equipment thereat (the "Commencement Date"); upon the occurrence of (i) and (ii), the CCS Payments shall continue for 40 quarters thereafter, subject to extension pursuant to Section 2(d).

(i) Subject to Section 2(c), CCS Payments shall be made within 15 Business Days following the end of each quarter following the Commencement Date.

(ii) In the event of operations at the Ethanol Plant for less than a full quarter, CCS Payments for such quarter shall be pro-rated in accordance with the number of days during such quarter as to which there are operations at the Ethanol Plant.

(c) Negative EBITDA; Reduced Payment. Generally, a CCS Payment shall not be made for any quarter during which operations of Maker result in Negative EBITDA or during which the Ethanol Plant is not operating; however, if Net CCS Benefits received by Maker for a quarter during which there is Negative EBITDA result in positive Adjusted EBITDA for such quarter, a CCS Payment shall be paid on the basis of 27.5% multiplied times Adjusted EBITDA. As used in this Section 2(c), "Adjusted EBITDA" for a quarter during which there is Negative EBITDA means the addition of Net CCS Benefits to EBITDA which creates positive EBITDA for such quarter; for this purpose, Net CCS Benefits are not included in net income for the purpose of calculating EBITDA.

(d) Extension of Term. In the event that operations at the Ethanol Plant are suspended for a full quarter, and as a result Maker fails to receive Gross CCS Benefits, the Term shall be extended by the number of full quarters during which operations at the Ethanol Plant are suspended.

3. Mandatory Payments; Prepayment.

(a) If any payments provided herein shall become due on a day other than a Business Day, such payment may be made on the next succeeding Business Day.

(b) Commencing with the Commencement Date, Maker or Payee may propose the terms of a prepayment of this note (a "Prepayment") in a written notice to the other (the "Offer"); thereafter, either the recipient of the Offer may accept the Offer, or for a period of 60 days following receipt of such notice (the "Notice Period"), Maker and Payee may negotiate mutually acceptable terms for a Prepayment. If Maker and Payee negotiate acceptable terms as to a Prepayment, the closing thereof shall occur within ten days following the expiration of the Notice Period or such other date as Maker and Payee may agree. If Maker and Payee fail to negotiate acceptable terms for a Prepayment prior to the expiration of the Notice Period, then the Offer shall automatically terminate and be of no further force or effect.

(c) In the event that Maker enters into a CCS Transaction and defaults on a material provision thereunder which is not cured by Maker utilizing commercially reasonable means within the default notice period, Payee shall have the right, but not the obligation, to work with Maker or the JV Partner directly to remedy such event of default, or require Maker to pay Payee an amount equal to the remaining principal value of this note on the basis of the principal amount amortizing over 40 quarters following the Commencement Date.

4. Covenants of Maker.

(a) Maker commits to engage in immediate discussions with potential CCS joint venture partners following the closing of the Asset Purchase Agreement. Maker also agrees to provide Payee with regular updates in writing (on a quarterly basis at a minimum) on the status and timing of its discussions with potential JV partners.

(b) Maker shall cause AgriAsset Holdings to execute and deliver to Payee a guaranty of the obligations of Maker herein.

(c) If and when a CCS Transaction is contemplated, Maker will not intentionally defer commercial operations beyond the Term, if the primary purpose of such deferral is to reduce payments under this note beyond the Term.

5. Default. The occurrence of any of the following events shall be an "Event of Default" (herein so called) under this note:

(a) Maker shall fail to make any payments due herein on the date such payment is due and such default is not fully cured within 15 Business Days after Payee delivers written notice to Maker of the occurrence thereof; or

(b) Default shall be made in the performance or observance of any covenant, condition or agreement contained herein (other than payment of principal) and such default is not fully cured within 15 Business Days after Payee delivers written notice to Maker of the occurrence thereof; or

(c) Maker shall become unable, admit in writing its inability or fail generally to pay its debts as they become due; or

(d) Maker shall (i) apply for or consent to the appointment of, or the taking of possession by, a receiver, custodian, trustee or liquidator of itself or of all or a substantial part of its property or assets, (ii) make a general assignment for the benefit of its creditors, (iii) commence a voluntary case under the United States Bankruptcy Code (as now or hereafter in effect) or under the comparable laws of any jurisdiction (foreign or domestic), (iv) file a petition seeking to take advantage of any bankruptcy, insolvency, moratorium, reorganization or other similar law affecting the enforcement of creditors' rights generally, (v) acquiesce in writing to any petition filed against it in an involuntary case under United States Bankruptcy Code (as now or hereafter in effect) or under the comparable laws of any jurisdiction (foreign or domestic), or (vi) issue a notice of bankruptcy or winding down of its operations or issue a press release regarding same; or

(e) A proceeding or case shall be commenced in respect of Maker, without its application or consent, in any court of competent jurisdiction, seeking (i) the liquidation, reorganization, moratorium, dissolution, winding up, or composition or readjustment of its debts, (ii) the appointment of a trustee, receiver, custodian, liquidator or the like of it or of all or any substantial part of its assets in connection with the liquidation or dissolution of the Maker or (iii) similar relief in respect of it under any law providing for the relief of debtors, and such proceeding or case described in clause (i), (ii) or (iii) shall continue undismissed, or unstayed and in effect, for a period of 30 days or any order for relief shall be entered in an involuntary case under the United States Bankruptcy Code (as now or hereafter in effect) or under the comparable laws of any jurisdiction (foreign or domestic) against Maker or action under the laws of any jurisdiction (foreign or domestic) analogous to any of the foregoing shall be taken with respect to Maker and shall continue undismissed, or unstayed and in effect for a period of 30 days.

6. Remedies upon an Event of Default. If an Event of Default shall have occurred and shall be continuing, the holder of this note may immediately exercise any of its default rights and remedies with respect to Maker under this note and applicable law and equity. No remedy conferred hereby shall be exclusive of any other remedy referred to herein or now or hereafter available at law, in equity, by statute or otherwise, and the failure of the holder of this note at any time to exercise the rights set forth in this paragraph shall not be deemed a waiver thereof.

7. Change of Control. If, upon the occurrence of a Change of Control, (i) if the Maker has not entered into a CCS Transaction, Maker shall pay, or cause to be paid, an amount equal to 27.5% of the Net Gain (as defined below) on the Change of Control ("Change of Control Payment"), up to $12 million, and (ii) if the Maker has entered into a CCS Transaction, Maker shall pay, or cause to be paid, the Change of Control Payment, less the aggregate payments received by Payee pursuant to Section 2, up to $20 million. "Net Gain" shall be calculated based on a sale value greater than the total of the $39 million purchase price of the Ethanol Plant as set forth in the Asset Purchase Agreement plus (x) the amortized value of all capital expenditures at the Ethanol Plant, plus (y) all Adjusted EBITDA losses by Maker following the closing of its purchase of the Ethanol Plant, plus (z) all expenses of Maker in connection with such Change of Control transaction.

8. Waivers by Maker. Except to the extent, if any, that notice of an Event of Default is expressly required herein, Maker waives notice (including, without limitation, notice of intent to accelerate and notice of acceleration, notice of protest and notice of dishonor), demand, presentment for payment, protest, diligence in collecting and the filing of suit for the purpose of fixing liability and consents that the time of payment hereof may be extended and re-extended from time to time without notice.

9. Waivers by Payee. No failure or delay on the part of Payee in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof or otherwise prejudice any right of Payee, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege, nor shall any waiver by Payee of any such right or rights on any one occasion be deemed a waiver of the same right or rights on any future occasion.

10. Venue; Choice of Law. Maker and Payee hereby irrevocably agree that any legal proceeding in respect of this note shall be brought in the district courts of Deaf Smith County, Texas, or in the United States District Court for the Northern District of Texas, Amarillo Division (collectively, the "Specified Courts"). Maker and Payee hereby irrevocably submit to the non-exclusive jurisdiction of the state and federal courts of the State of Texas. Maker and Payee hereby irrevocably waive, to the fullest extent permitted by law, any objection which either of them may now or hereafter have to the laying of venue of any suit, action or proceeding arising out of or relating to this note brought in any Specified Court, and hereby further irrevocably waive any claims that any such suit, action or proceeding brought in any such court has been brought in an inconvenient forum. THIS NOTE SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE APPLICABLE LAWS OF THE STATE OF DELAWARE AND THE UNITED STATES OF AMERICA FROM TIME TO TIME IN EFFECT WITHOUT REGARD TO ANY CONFLICT OF LAW PRINCIPLES.

11. Successors and Assigns. This note and all the covenants and agreements contained herein shall be binding upon, and shall inure to the benefit of, the respective successors and permitted assigns of Maker and Payee, the obligations and rights of Maker and Payee may not be assigned without the written consent of the other (and any attempted assignment without such consent shall be null and void); provided, however, that the rights of each party hereunder may be assigned to an Affiliate of such party after written notice thereof to the other party.

12. Amendments. This note may not be modified or amended in any manner except in a writing executed by Maker and Payee.

13. Severability. If any provision of this note is held to be illegal, invalid or unenforceable under present or future laws, the legality, validity and enforceability of the remaining provisions of this note shall not be affected thereby, and this note shall be liberally construed so as to carry out the intent of the parties to it. Each waiver in this note is subject to the overriding and controlling rule that it shall be effective only if and to the extent that (i) it is not prohibited by applicable law and (ii) applicable law neither provides for nor allows any material sanctions to be imposed against Payee for having bargained for and obtained it.

14. Entire Agreement. Together with the Asset Purchase Agreement, this note contains the entire understanding of the parties relating to the subject matter contained herein and supersedes all prior agreements and understandings, written or oral, relating to the subject matter hereof.

15. Notices. Any and all notices, demands, and communications provided for herein or made hereunder shall be given in writing as set forth in Section 12.4 of the Asset Purchase Agreement and shall be deemed given to a party at the earlier of (a) when actually delivered to such party, (b) when a facsimile transmitted to such party at the facsimile number indicated for such party in the Asset Purchase Agreement (or to such other facsimile number as may have been substituted by notice pursuant to the Asset Purchase Agreement, (c) the date of electronic transmission (e.g., "pdf"), if so transmitted on a Business Day during normal business hours, and otherwise on the next Business Day, or (d) when mailed to such party by certified U.S. Mail (return receipt requested) or sent by overnight courier, confirmed by receipt, and addressed at the respective addresses designated in Section 12.4 of the Asset Purchase Agreement (or to such other address as may have been substituted by notice pursuant thereto).

16. Interpretation. For purposes of this Agreement, (a) the words "include," "includes" and "including" shall be deemed to be followed by the words "without limitation," and (b) the words "herein," "hereof," "hereby," "hereto" and "hereunder" refer to this note as a whole. Unless the context otherwise requires, references herein (i) to Sections mean the Sections of this Agreement; (ii) to an agreement, instrument or other document means such agreement, instrument or other document as amended, supplemented and modified from time to time to the extent permitted by the provisions thereof and by this note; (iii) to a quarter means a calendar quarter; and (iv) to a statute means such statute as amended from time to time and includes any successor legislation thereto and any regulations promulgated thereunder. Section headings appearing in this note are for convenient reference only and shall not be used to interpret or limit the meaning of any provision of this note. All pronouns and any variations thereof shall be deemed to refer to the masculine, feminine, neuter, singular or plural, as the identity of the entities or persons referred may require. This note shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting an instrument or causing any instrument to be drafted.

[the next page is the signature page]

IN WITNESS WHEREOF, the undersigned, by its duly authorized and acting representative, has executed this CCS Promissory Note as of the date first set forth above.

<u>MAKER</u>:

HEREFORD ETHANOL PARTNERS, L.P.

By: Hereford Ethanol LLC, its general partner

By:

Donald E. Gales, Chairman

EXHIBIT G

ETHANOL RAILCAR ARRANGEMENT

Seller agrees to convey those specific lease riders regarding rail cars described in the chart on page 4 of Schedule 6.13(a) to Buyer. Seller will continue to pay for the identified railcar leases through January 31, 2021, and Buyer shall assume such leases obligations as of February 1, 2021. Seller shall also provide for the storage of a portion of such railcars at an offsite storage location selected solely by Seller at its costs, through the date of March 31, 2021. The number of railcars Seller shall be obligated to store at its cost, shall be a number which is sufficient to allow a corn unit train to unload at the facility. Buyer shall be responsible for the costs of transferring the stored railcars back to the Ethanol Refiner at a time of its choosing.

Exhibit 21.1

Subsidiaries of the Company

Company	State of Organization
Birmingham BioEnergy Partners LLC	Texas
BlendStar LLC	Texas
Fluid Quip Technologies, LLC	Ohio
Green Plains Atkinson LLC	Delaware
Green Plains Central City LLC	Delaware
Green Plains Ethanol Storage LLC	Delaware
Green Plains Fairmont LLC	Delaware
Green Plains Grain Company LLC	Delaware
Green Plains Holdings LLC	Delaware
Green Plains Hopewell LLC	Delaware
Green Plains Logistics LLC	Delaware
Green Plains Madison LLC	Delaware
Green Plains Mount Vernon LLC	Delaware
Green Plains Obion LLC fka Ethanol Grain Processors, LLC	Tennessee
Green Plains Operating Company LLC	Delaware
Green Plains Ord LLC	Delaware
Green Plains Otter Tail LLC	Delaware
Green Plains Partners LP	Delaware
Green Plains Shenandoah LLC fka GPRE Shenandoah, LLC	Delaware
Green Plains Superior LLC fka Superior Ethanol, L.L.C.	Iowa
Green Plains Trade Group LLC	Delaware
Green Plains Commodity Management LLC fka Green Plains Trade Group II LLC	Delaware
Green Plains Trucking II LLC	Delaware
Green Plains Wood River LLC	Delaware
Green Plains York LLC	Delaware

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Green Plains Inc.:

We consent to the incorporation by reference in the registration statement (No. 333-235740) on Form S-3 and the registration statements (Nos. 333-143147, 333-154280, 333-159049, 333-174219, 333-193827, and 333-218933) on Form S-8 of Green Plains Inc. of our reports dated February 16, 2021, with respect to the consolidated balance sheets of Green Plains Inc. and subsidiaries as of December 31, 2020, and 2019, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2020, which reports appear in the December 31, 2020 annual report on Form 10-K of Green Plains Inc.

Our report dated February 16, 2021, on the effectiveness of internal control over financial reporting as of December 31, 2020 contains an explanatory paragraph that states that the Company completed the acquisition of Fluid Quip Technologies, LLC in 2020, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2020, Fluid Quip Technologies, LLC's internal control over financial reporting associated with approximately 3% of the Company's consolidated total assets and approximately 0% of the Company's consolidated total revenues as of and for the year ended December 31, 2020. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of Fluid Quip Technologies, LLC.

Our report dated February 16, 2021, on the consolidated financial statements as of December 31, 2020 contains an explanatory paragraph that refers to the Company's adoption of ASC Topic 842, *Leases*.

/s/ KPMG LLP

Omaha, Nebraska
February 16, 2021

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a) AND SECTION 302 OF THE SARBANES OXLEY ACT OF 2002

I, Todd A. Becker, certify that:

1. I have reviewed this Annual Report on Form 10-K of Green Plains Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 16, 2021

/s/ Todd A. Becker
Todd A. Becker
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a) AND SECTION 302 OF THE SARBANES OXLEY ACT OF 2002

I, G. Patrich Simpkins Jr., certify that:

1. I have reviewed this Annual Report on Form 10-K of Green Plains Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 16, 2021

/s/ G. Patrich Simpkins Jr.
G. Patrich Simpkins Jr.
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Green Plains Inc. (the "company") on Form 10-K for the fiscal year ended December 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Todd A. Becker, President and Chief Executive Officer of the company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1) The Report fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: February 16, 2021

/s/ Todd A. Becker

Todd A. Becker

President and Chief Executive Officer

Exhibit 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Green Plains Inc. (the “company”) on Form 10-K for the fiscal year ended December 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, G. Patrich Simpkins Jr., Chief Financial Officer of the company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1) The Report fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the company.

Date: February 16, 2021

/s/ G. Patrich Simpkins Jr.
G. Patrich Simpkins Jr.
Chief Financial Officer