

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

FORM 10-Q

Quarterly Report Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

For the Quarterly Period Ended September 30, 2020

Commission File Number 001-32924

GREEN PLAINS INC.

(Exact name of registrant as specified in its charter)

Iowa

(State or other jurisdiction of incorporation or organization)

84-1652107

(I.R.S. Employer Identification No.)

1811 Aksarben Drive, Omaha, NE 68106

(Address of principal executive offices, including zip code)

(402) 884-8700

(Registrant's telephone number, including area code)

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

<u>Title of each class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$0.001 per share	GPPE	The Nasdaq Stock Market LLC

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.

x Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

x Yes 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 is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes x No

The number of shares of common stock, par value \$0.001 per share, outstanding as of November 2, 2020, was 35,658,284 shares.

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Commonly Used Defined Terms

The abbreviations, acronyms and industry terminology used in this quarterly report are defined as follows:

Green Plains Inc., Subsidiaries, and Partners:

Green Plains; the company	Green Plains Inc. and its subsidiaries
BioProcess Algae	BioProcess Algae LLC
Green Plains Cattle; GPCC	Green Plains Cattle Company LLC
Green Plains Commodity Management	Green Plains Commodity Management LLC
Green Plains Grain	Green Plains Grain Company LLC
Green Plains Partners; the partnership	Green Plains Partners LP
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
LIBOR	London Interbank Offered Rate
LTIP	Long-Term Incentive Plan
R&D Credits	Research and development tax credits
SEC	Securities and Exchange Commission

Industry and Other Defined Terms:

Bgy	Billion gallons per year
CAFE	Corporate Average Fuel Economy
the CARES Act	Coronavirus Aid, Relief, and Economic Security Act
COVID-19	Coronavirus Disease 2019
D.C.	District of Columbia
DOE	Department of Energy
E10	Gasoline blended with up to 10% ethanol by volume
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
EPA	U.S. Environmental Protection Agency
GATT	General Agreement on Tariffs and Trade
MmBtu	Million British Thermal Units
Mmg	Million gallons
MTBE	Methyl tertiary-butyl ether
MVC	Minimum volume commitment
RFS II	Renewable Fuels Standard II
RIN	Renewable identification number
RVO	Renewable volume obligation
SRE	Small refinery exemption
U.S.	United States
USDA	U.S. Department of Agriculture
WTO	World Trade Organization

Item 1. Financial Statements.

PART 1 – FINANCIAL INFORMATION
GREEN PLAINS INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except share amounts)

	September 30, 2020 (unaudited)	December 31, 2019
ASSETS		
Current assets		
Cash and cash equivalents	\$ 150,407	\$ 245,977
Restricted cash	31,877	23,919
Accounts receivable, net of allowances of \$191 and \$166, respectively	54,482	107,183
Income taxes receivable	57,929	6,216
Inventories	184,661	252,992
Prepaid expenses and other	14,634	13,685
Derivative financial instruments	14,687	17,941
Total current assets	508,677	667,913
Property and equipment, net of accumulated depreciation and amortization of \$541,690 and \$486,677, respectively	858,490	827,271
Operating lease right-of-use assets	56,904	52,476
Investment in equity method investees	73,563	68,998
Other assets	39,786	81,560
Total assets	<u>\$ 1,537,420</u>	<u>\$ 1,698,218</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 89,566	\$ 156,693
Accrued and other liabilities	28,682	39,384
Derivative financial instruments	17,577	8,721
Operating lease current liabilities	14,663	16,626
Short-term notes payable and other borrowings	146,614	187,812
Current maturities of long-term debt	34,378	132,555
Total current liabilities	331,480	541,791
Long-term debt	345,056	243,990
Operating lease long-term liabilities	45,360	38,314
Other liabilities	11,969	8,837
Total liabilities	733,865	832,932
Commitments and contingencies (Note 14)		
Stockholders' equity		
Common stock, \$0.001 par value; 75,000,000 shares authorized; 47,466,527 and 46,964,115 shares issued, and 35,653,366 and 36,031,933 shares outstanding, respectively	47	47
Additional paid-in capital	738,774	734,580
Retained earnings	89,005	148,150
Accumulated other comprehensive loss	(10,913)	(11,064)
Treasury stock, 11,813,161 and 10,932,182 shares, respectively	(131,287)	(119,808)
Total Green Plains stockholders' equity	685,626	751,905
Noncontrolling interests	117,929	113,381
Total stockholders' equity	803,555	865,286
Total liabilities and stockholders' equity	<u>\$ 1,537,420</u>	<u>\$ 1,698,218</u>

See accompanying notes to the consolidated financial statements.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Revenues				
Product revenues	\$ 423,027	\$ 631,032	\$ 1,441,248	\$ 1,696,245
Service revenues	1,035	1,318	3,707	5,315
Total revenues	<u>424,062</u>	<u>632,350</u>	<u>1,444,955</u>	<u>1,701,560</u>
Costs and expenses				
Cost of goods sold (excluding depreciation and amortization expenses reflected below)	393,933	632,129	1,372,057	1,700,481
Operations and maintenance expenses	6,647	6,216	19,410	19,314
Selling, general and administrative expenses	19,934	18,542	62,090	56,450
Goodwill impairment	-	-	24,091	-
Gain on sale of asset	(2,000)	-	(2,000)	-
Depreciation and amortization expenses	19,753	17,828	57,208	52,963
Total costs and expenses	<u>438,267</u>	<u>674,715</u>	<u>1,532,856</u>	<u>1,829,208</u>
Operating loss from continuing operations	<u>(14,205)</u>	<u>(42,365)</u>	<u>(87,901)</u>	<u>(127,648)</u>
Other income (expense)				
Interest income	3	767	643	2,813
Interest expense	(10,169)	(10,548)	(29,536)	(31,528)
Other, net	12	88	862	630
Total other expense	<u>(10,154)</u>	<u>(9,693)</u>	<u>(28,031)</u>	<u>(28,085)</u>
Loss from continuing operations before income taxes and income from equity method investees	(24,359)	(52,058)	(115,932)	(155,733)
Income tax benefit (expense)	(7,280)	12,530	48,461	40,692
Income from equity method investees, net of income taxes	906	644	20,917	534
Net loss from continuing operations including noncontrolling interest	<u>(30,733)</u>	<u>(38,884)</u>	<u>(46,554)</u>	<u>(114,507)</u>
Net income from discontinued operations, net of income taxes	-	3,393	-	966
Net loss	<u>(30,733)</u>	<u>(35,491)</u>	<u>(46,554)</u>	<u>(113,541)</u>
Net income attributable to noncontrolling interests	3,753	3,479	12,591	13,570
Net loss attributable to Green Plains	<u>\$ (34,486)</u>	<u>\$ (38,970)</u>	<u>\$ (59,145)</u>	<u>\$ (127,111)</u>
Earnings per share - basic and diluted				
Net loss from continuing operations	\$ (1.00)	\$ (1.15)	\$ (1.71)	\$ (3.28)
Net income from discontinued operations	-	0.09	-	0.03
Net loss attributable to Green Plains	<u>\$ (1.00)</u>	<u>\$ (1.06)</u>	<u>\$ (1.71)</u>	<u>\$ (3.25)</u>
Weighted average shares outstanding:				
Basic	<u>34,629</u>	<u>36,913</u>	<u>34,632</u>	<u>39,092</u>
Diluted	<u>34,629</u>	<u>36,913</u>	<u>34,632</u>	<u>39,092</u>

See accompanying notes to the consolidated financial statements.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Net loss	\$ (30,733)	\$ (35,491)	\$ (46,554)	\$ (113,541)
Other comprehensive income (loss), net of tax:				
Unrealized gains (losses) on derivatives arising during the period, net of tax benefit (expense) of \$859, (\$5,149), (\$160) and (\$12,953), respectively	(2,696)	28,095	503	54,472
Reclassification of realized gains on derivatives, net of tax expense of \$0, \$13,445, \$1,431 and \$9,358, respectively	-	(53,255)	(4,492)	(39,439)
Other comprehensive income (loss), net of tax	(2,696)	(25,160)	(3,989)	15,033
Share of equity method investees other comprehensive income (loss) arising during the period, net of tax benefit (expense) of \$6,705, \$3,555, (\$1,318) and \$3,555, respectively	(21,057)	(10,771)	4,140	(10,771)
Total other comprehensive income (loss), net of tax	(23,753)	(35,931)	151	4,262
Comprehensive loss	(54,486)	(71,422)	(46,403)	(109,279)
Comprehensive income attributable to noncontrolling interests	3,753	3,479	12,591	13,570
Comprehensive loss attributable to Green Plains	\$ (58,239)	\$ (74,901)	\$ (58,994)	\$ (122,849)

See accompanying notes to the consolidated financial statements.

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

	Nine Months Ended September 30,	
	2020	2019
Cash flows from operating activities:		
Net loss from continuing operations including noncontrolling interest	\$ (46,554)	\$ (114,507)
Net income from discontinued operations, net of income taxes	-	966
Net loss	(46,554)	(113,541)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	57,208	52,963
Amortization of debt issuance costs and debt discount	16,097	15,633
Goodwill impairment	24,091	-
Gain on sale of assets, net	(1,405)	-
Deferred income taxes	(10,569)	(38,918)
Stock-based compensation	5,720	7,406
Income from equity method investees, net of income taxes	(20,917)	(534)
Distribution from equity method investments	27,910	-
Other	18	1,245
Changes in operating assets and liabilities before effects of business combinations and dispositions:		
Accounts receivable	54,683	21,106
Inventories	68,301	52,400
Derivative financial instruments	5,532	7,208
Prepaid expenses and other assets	2,051	3,900
Accounts payable and accrued liabilities	(78,091)	(22,359)
Current income taxes	(26,825)	(2,175)
Other	(802)	(2,167)
Net cash provided by (used in) operating activities - continuing operations	76,448	(17,833)
Net cash provided by operating activities - discontinued operations	-	17,469
Net cash provided by (used in) operating activities	76,448	(364)
Cash flows from investing activities:		
Purchases of property and equipment, net	(85,376)	(43,372)
Proceeds from the sale of discontinued operations, net of cash divested	-	77,240
Proceeds from the sale of assets, net	-	3,469
Other investing activities	(4,098)	(100)
Net cash provided by (used in) investing activities - continuing operations	(89,474)	37,237
Net cash used in investing activities - discontinued operations	-	(4,169)
Net cash provided by (used in) investing activities	(89,474)	33,068
Cash flows from financing activities:		
Proceeds from the issuance of long-term debt	13,000	180,100
Payments of principal on long-term debt	(12,933)	(68,235)
Proceeds from short-term borrowings	1,816,821	1,994,777
Payments on short-term borrowings	(1,866,526)	(2,070,273)
Payments for repurchase of common stock	(11,479)	(55,884)
Payments of cash dividends and distributions	(8,281)	(26,189)
Proceeds from disgorgement of shareholder short-swing profits	-	6,699
Payments of loan fees	(3,900)	(5,290)
Payments related to tax withholdings for stock-based compensation	(1,288)	(2,101)
Net cash used in financing activities - continuing operations	(74,586)	(46,396)
Net cash used in financing activities - discontinued operations	-	(50,464)
Net cash used in financing activities	(74,586)	(96,860)
Net change in cash, cash equivalents and restricted cash	(87,612)	(64,156)
Cash, cash equivalents and restricted cash, beginning of period	269,896	283,284
Discontinued operations cash activity included above:		
Add: Cash balance included in current assets of discontinued operations at beginning of period	-	34,911
Cash, cash equivalents and restricted cash, end of period	\$ 182,284	\$ 254,039

Continued on the following page

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

Continued from the previous page

	Nine Months Ended September 30,	
	2020	2019
Reconciliation of total cash, cash equivalents and restricted cash:		
Cash and cash equivalents	\$ 150,407	\$ 235,537
Restricted cash	31,877	18,502
Total cash, cash equivalents and restricted cash	<u>\$ 182,284</u>	<u>\$ 254,039</u>
Assets disposed of in sale	\$ -	\$ 527,614
Less: liabilities disposed	-	(373,846)
Net assets disposed	<u>\$ -</u>	<u>\$ 153,768</u>
Supplemental disclosures of cash flow:		
Cash paid (refunded) for income taxes	<u>\$ (4,533)</u>	<u>\$ 640</u>
Cash paid for interest of continuing operations	<u>\$ 20,325</u>	<u>\$ 21,777</u>
Cash paid for interest of discontinued operations	<u>\$ -</u>	<u>\$ 11,556</u>

See accompanying notes to the consolidated financial statements.

GREEN PLAINS INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

1. BASIS OF PRESENTATION, DESCRIPTION OF BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

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. 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 September 30, 2020 and December 31, 2019, excluding intercompany balances, are \$87.3 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 September 30, 2020 and December 31, 2019, excluding intercompany balances, are \$165.1 million and \$180.9 million, respectively, which primarily consist of long-term debt as discussed in *Note 9 – 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, a previously a wholly owned subsidiary of Green Plains, was disposed of during the third quarter of 2019. After closing, GPCC is no longer consolidated in the company’s consolidated financial statements and the GPCC investment is 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. See *Note 3 - Dispositions and Discontinued Operations* and *Note 17 – Subsequent Events* for further details.

The company also owns a 90.0% interest in BioProcess Algae, a joint venture formed in 2008, and consolidates their results in its consolidated financial statements.

The accompanying unaudited consolidated financial statements are prepared in accordance with GAAP for interim financial information and the instructions to Form 10-Q and Article 10 of Regulation S-X. Because they do not include all of the information and notes required by GAAP, the consolidated financial statements should be read in conjunction with the company’s annual report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 20, 2020.

The unaudited financial information reflects adjustments, which are, in the opinion of management, necessary for a fair presentation of results of operations, financial position and cash flows for the periods presented. The adjustments are normal and recurring in nature, unless otherwise noted. Interim period results are not necessarily indicative of the results to be expected for the entire year.

Reclassifications

Certain prior year amounts have been reclassified to conform to the current year presentation. These reclassifications did not affect total revenues, costs and expenses, net income or stockholders’ equity.

Revision of Previously Issued Financial Statements

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 by \$30.0 million 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 year to date consolidated statement of operations have been revised to correct these amounts. The company will update revenues and cost of goods sold in future filings to properly reflect these amounts for the three and six months ended June 30, 2020.

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, operating leases, impairment of long-lived assets and goodwill, derivative financial instruments and accounting for income taxes, 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 (4) partnership, which includes fuel storage and transportation services.

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 revolving 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. 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 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. 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.

Recent Accounting Pronouncements

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 is currently evaluating the timing of adoption and impact of this standard on its consolidated financial statements however anticipates it will result in an increase to long-term debt and a decrease in additional paid-in-capital as well as a reduction in non-cash interest expense related to the company's convertible notes.

2. 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):

	Three Months Ended September 30, 2020					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Distillers grains	4,095	-	-	-	-	4,095
Corn oil	-	2,938	-	-	-	2,938
Service revenues	-	-	-	920	-	920
Other	66	1,408	-	-	-	1,474
Intersegment revenues	25	-	-	2,289	(2,314)	-
Total revenues from contracts with customers	4,186	4,346	-	3,209	(2,314)	9,427
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :						
Ethanol	263,390	56,895	-	-	-	320,285
Distillers grains	51,692	10,696	-	-	-	62,388
Corn oil	12,433	5,805	-	-	-	18,238
Grain	1	11,099	-	-	-	11,100
Other	1,276	1,233	-	-	-	2,509
Intersegment revenues	-	5,354	-	-	(5,354)	-
Total revenues from contracts accounted for as derivatives	328,792	91,082	-	-	(5,354)	414,520
Leasing revenues under ASC 842 ⁽²⁾ :	-	-	-	18,173	(18,058)	115
Total Revenues	\$ 332,978	\$ 95,428	\$ -	\$ 21,382	\$ (25,726)	\$ 424,062

	Nine Months Ended September 30, 2020					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Distillers grains	25,159	-	-	-	-	25,159
Corn oil	-	2,938	-	-	-	2,938
Service revenues	-	-	-	3,366	-	3,366
Other	4,257	3,668	-	-	-	7,925
Intersegment revenues	75	-	-	6,201	(6,276)	-
Total revenues from contracts with customers	29,491	6,606	-	9,567	(6,276)	39,388
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :						
Ethanol	849,298	243,930	-	-	-	1,093,228
Distillers grains	179,854	28,960	-	-	-	208,814
Corn oil	36,621	23,681	-	-	-	60,302
Grain	7	26,773	-	-	-	26,780
Other	3,974	12,128	-	-	-	16,102
Intersegment revenues	-	17,030	-	-	(17,030)	-
Total revenues from contracts accounted for as derivatives	1,069,754	352,502	-	-	(17,030)	1,405,226
Leasing revenues under ASC 842 ⁽²⁾ :	-	-	-	52,467	(52,126)	341
Total Revenues	\$ 1,099,245	\$ 359,108	\$ -	\$ 62,034	\$ (75,432)	\$ 1,444,955

	Three Months Ended September 30, 2019					
	Ethanol Production	Agribusiness & Energy Services	Food & Ingredients	Partnership	Eliminations	Total
Revenues:						
Revenues from contracts with customers under ASC 606:						
Ethanol	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Distillers grains	16,455	-	-	-	-	16,455
Service revenues	-	-	-	1,275	-	1,275
Other	127	895	-	-	-	1,022
Intersegment revenues	24	-	-	2,046	(2,070)	-
Total revenues from contracts with customers	16,606	895	-	3,321	(2,070)	18,752
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :						
Ethanol	389,847	111,454	-	-	-	501,301
Distillers grains	62,698	6,077	-	-	-	68,775
Corn oil	14,308	5,509	-	-	-	19,817
Grain	2	19,056	-	-	-	19,058
Other	945	3,659	-	-	-	4,604
Intersegment revenues	-	7,293	-	-	(7,293)	-
Total revenues from contracts accounted for as derivatives	467,800	153,048	-	-	(7,293)	613,555
Leasing revenues under ASC 842 ⁽²⁾ :	-	-	-	16,833	(16,790)	43
Total Revenues	\$ 484,406	\$ 153,943	\$ -	\$ 20,154	\$ (26,153)	\$ 632,350

	Nine Months Ended September 30, 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	47,860	-	-	-	-	47,860
Service revenues	-	-	-	4,966	-	4,966
Other	2,135	1,515	-	-	-	3,650
Intersegment revenues	75	-	-	5,267	(5,342)	-
Total revenues from contracts with customers	50,690	1,515	-	10,233	(5,342)	57,096
Revenues from contracts accounted for as derivatives under ASC 815 ⁽¹⁾ :						
Ethanol	946,390	324,756	-	-	-	1,271,146
Distillers grains	165,436	32,165	-	-	-	197,601
Corn oil	35,915	22,943	1,451	-	-	60,309
Grain	138	59,140	-	-	-	59,278
Other	7,613	48,168	-	-	-	55,781
Intersegment revenues	-	19,432	-	-	(19,432)	-
Total revenues from contracts accounted for as derivatives	1,155,492	506,604	1,451	-	(19,432)	1,644,115
Leasing revenues under ASC 840 ⁽²⁾ :	-	-	-	51,833	(51,484)	349
Total Revenues	\$ 1,206,182	\$ 508,119	\$ 1,451	\$ 62,066	\$ (76,258)	\$ 1,701,560

(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*.

Major Customers

Revenue from Customer A represented 10% of total revenues for the nine months ended September 30, 2020 and 10% and 11% of total revenues for the three and nine months ended September 30, 2019, respectively. Revenue from Customer B represented 11% and 10% of total revenues for the three and nine months ended September 30, 2019, respectively. Revenues from these customers are reported in the ethanol production segment.

3. DISPOSITIONS AND DISCONTINUED OPERATIONS

DISPOSITIONS

Disposition of Green Plains Cattle Company LLC

On September 1, 2019, the company, TGAM Agribusiness Fund Holdings-B LP (“TGAM”) and StepStone Atlantic Fund, L.P. (“StepStone”) formed a joint venture and entered into a 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 initial transaction. The LLC Agreement contained certain earn-out or bonus provisions to be paid by or received from GPCC if certain EBITDA thresholds were met. Pursuant to the bonus provision, on August 31, 2020, Green Plains earned \$2.0 million which has been recorded within “Gain on sale of asset” on the consolidated statements of operations for the three and nine months ended September 30, 2020.

Under the LLC Agreement, Green Plains has certain rights and obligations, including but not limited to, the right or obligation: (i) to designate two Managers to the Board of Managers of GPCC (the “Board”), or in the event the size of the Board is increased, the number of Managers equal to two-fifths of the Board, rounded up, and (ii) to fund additional capital contributions in accordance with their percentage interest upon mutual agreement by Green Plains, TGAM and StepStone. Additionally, TGAM and StepStone both have the right or obligation to designate one Manager, or in the event the size of the Board is increased, the number of Managers equal to one-fifths of the Board, rounded up. Each Manager serving on the Board shall have one vote and a majority of the Managers serving on the Board shall constitute a quorum for the transaction of business of the Board. Green Plains’ allocation under the LLC Agreement will be subject to certain adjustments.

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	<u>\$ 153,768</u>

Subsequent to September 30, 2020, the company sold its remaining interest in GPCC. Refer to *Note 17 – Subsequent Events* for further discussion.

DISCONTINUED OPERATIONS

GPCC is no longer consolidated in the company’s consolidated financial statements and the GPCC investment is 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 all applicable periods. 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 (in thousands). GPCC was disposed of on September 1, 2019, as such operational results through August 31, 2019 are included in the fiscal year 2019 amounts presented below.

	Three Months Ended September 30, 2019 ⁽¹⁾	Nine Months Ended September 30, 2019 ⁽¹⁾
Product revenues	\$ 160,113	\$ 638,122
Costs and expenses		
Cost of goods sold (excluding depreciation and amortization expenses reflected below)	150,214	614,671
Selling, general and administrative expenses	1,472	5,931
Depreciation and amortization expenses	1,004	4,199
Total costs and expenses	152,690	624,801
Operating income	7,423	13,321
Other income (expense)		
Interest income	42	182
Interest expense	(3,001)	(12,417)
Total other expense	(2,959)	(12,235)
Income before income taxes	4,464	1,086
Income tax expense	(1,071)	(120)
Net income	\$ 3,393	\$ 966

(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 \$5.5 million and \$14.5 million for the three and nine months ended September 30, 2019, respectively.

4. 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.

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 September 30, 2020				
	Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2)	Total
Assets:				
Cash and cash equivalents	\$ 150,407	\$	-	\$ 150,407
Restricted cash	31,877		-	31,877
Inventories carried at market	-		29,963	29,963
Unrealized gains on derivatives	-		14,687	14,687
Other assets	112		3,008	3,120
Total assets measured at fair value	\$ 182,396	\$	47,658	\$ 230,054
Liabilities:				
Accounts payable ⁽¹⁾	-	\$	24,074	\$ 24,074
Unrealized losses on derivatives	-		8,325	8,325
Total liabilities measured at fair value	\$ -	\$	32,399	\$ 32,399

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 \$12.3 million and \$37.3 million at September 30, 2020 and December 31, 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 \$536.7 million compared with a book value of \$526.0 million at September 30, 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 \$54.5 million and \$107.2 million at September 30, 2020 and December 31, 2019, respectively.

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.

5. 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 (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 (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Revenues:				
Ethanol production:				
Revenues from external customers	\$ 332,953	\$ 484,382	\$ 1,099,170	\$ 1,206,107
Intersegment revenues	25	24	75	75
Total segment revenues	332,978	484,406	1,099,245	1,206,182
Agribusiness and energy services:				
Revenues from external customers	90,074	146,650	342,078	488,687
Intersegment revenues	5,354	7,293	17,030	19,432
Total segment revenues	95,428	153,943	359,108	508,119
Food and ingredients:				
Revenues from external customers	-	-	-	1,451
Intersegment revenues	-	-	-	-
Total segment revenues	-	-	-	1,451
Partnership:				
Revenues from external customers	1,035	1,318	3,707	5,315
Intersegment revenues	20,347	18,836	58,327	56,751
Total segment revenues	21,382	20,154	62,034	62,066
Revenues including intersegment activity	449,788	658,503	1,520,387	1,777,818
Intersegment eliminations	(25,726)	(26,153)	(75,432)	(76,258)
Total Revenues	\$ 424,062	\$ 632,350	\$ 1,444,955	\$ 1,701,560

Refer to *Note 2 - Revenue*, for further disaggregation of revenue by operating segment.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Cost of goods sold:				
Ethanol production	\$ 330,162	\$ 512,527	\$ 1,103,486	\$ 1,289,366
Agribusiness and energy services	87,027	150,465	339,332	486,305
Food and ingredients	-	3	-	1,526
Intersegment eliminations	(23,256)	(30,866)	(70,761)	(76,716)
	<u>\$ 393,933</u>	<u>\$ 632,129</u>	<u>\$ 1,372,057</u>	<u>\$ 1,700,481</u>

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Operating income (loss):				
Ethanol production ⁽¹⁾	\$ (21,351)	\$ (49,289)	\$ (100,924)	\$ (147,366)
Agribusiness and energy services	4,296	(461)	7,207	9,184
Food and ingredients	-	(6)	-	(76)
Partnership	12,986	12,322	37,641	38,029
Intersegment eliminations	(2,447)	4,738	(4,597)	533
Corporate activities	(7,689)	(9,669)	(27,228)	(27,952)
	<u>\$ (14,205)</u>	<u>\$ (42,365)</u>	<u>\$ (87,901)</u>	<u>\$ (127,648)</u>

(1) For the nine months ended September 30, 2020, operating loss for ethanol production includes a goodwill impairment charge of \$24.1 million.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Depreciation and amortization:				
Ethanol production	\$ 17,493	\$ 15,547	\$ 50,575	\$ 46,324
Agribusiness and energy services	655	541	1,764	1,642
Partnership	940	991	2,867	2,747
Corporate activities	665	749	2,002	2,250
	<u>\$ 19,753</u>	<u>\$ 17,828</u>	<u>\$ 57,208</u>	<u>\$ 52,963</u>

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

	September 30, 2020	December 31, 2019
Total assets ⁽¹⁾ :		
Ethanol production	\$ 916,168	\$ 884,293
Agribusiness and energy services	293,868	410,400
Partnership	87,299	90,011
Corporate assets	256,063	324,280
Intersegment eliminations	(15,978)	(10,766)
	<u>\$ 1,537,420</u>	<u>\$ 1,698,218</u>

(1) Asset balances by segment exclude intercompany balances.

6. 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. There was no lower of cost or net realizable value inventory adjustment as of September 30, 2020. As of December 31, 2019, the company recorded a \$6.6 million lower of cost or net realized value inventory adjustment reflected in cost of goods sold within the ethanol production segment.

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

	September 30, 2020	December 31, 2019
Finished goods	\$ 64,803	\$ 85,975
Commodities held for sale	19,979	42,836
Raw materials	53,637	77,900
Work-in-process	10,124	13,523
Supplies and parts	36,118	32,758
	<u>\$ 184,661</u>	<u>\$ 252,992</u>

7. 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 for both the three months ended March 31, 2020 as well as the three months ended June 30, 2020. Significant assumptions inherent in the valuation methodologies for goodwill impairment testing were employed and include, but are not limited to, market capitalization, prospective financial information, growth rates, discount rates, inflationary factors, and cost of capital. Based on the partnership's quantitative evaluation as of June 30, 2020, it was determined that the fair value of the partnership reporting unit exceeded its carrying value, and the partnership concluded that the goodwill was not impaired, but could be at risk of future impairment. During the three months ended September 30, 2020, the partnership did not identify any triggering events, and as such, no impairment assessment was deemed necessary.

Changes in the carrying amount of goodwill attributable to each business segment were as follows (in thousands):

	Ethanol Production	Partnership	Total
Balance, December 31, 2019 ⁽¹⁾	\$ 24,091	\$ 10,598	\$ 34,689
Impairment charge	(24,091)	-	(24,091)
Balance, September 30, 2020 ⁽¹⁾	<u>\$ -</u>	<u>\$ 10,598</u>	<u>\$ 10,598</u>

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

8. DERIVATIVE FINANCIAL INSTRUMENTS

At September 30, 2020, the company's consolidated balance sheet reflected unrealized losses of \$10.9 million, net of tax, in accumulated other comprehensive income which primarily related to our share of equity method investees other comprehensive income. The company expects these items will be reclassified as income from equity method investees, net of income taxes over the next 12 months as a result of hedged transactions that are forecasted to occur. The amount realized in income from equity method investees, net of income taxes 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		Liability Derivatives' Fair Value	
	September 30, 2020	December 31, 2019	September 30, 2020	December 31, 2019
Derivative financial instruments	\$ 14,687	\$ 14,515 (1)	\$ 8,325 (2)	\$ 7,771
Other assets	8	-	-	-
Total	\$ 14,695	\$ 14,515	\$ 8,325	\$ 7,771

- (1) 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.
- (2) At September 30, 2020, derivative financial instruments, as reflected on the balance sheet, includes net unrealized losses on exchange traded futures and options contracts of \$9.6 million, which included \$2.5 million of net unrealized losses on derivative financial instruments designated as cash flow hedging instruments.

Refer to *Note 4 - 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			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Revenues	\$ -	\$ -	\$ 8,824	\$ -
Cost of goods sold	-	-	(2,901)	-
Net loss from discontinued operations, net of income taxes	-	66,700	-	48,797
Net gain recognized in loss before income taxes	\$ -	\$ 66,700	\$ 5,923	\$ 48,797

Gain (Loss) Recognized in Other Comprehensive Income on Derivatives	Amount of Gain (Loss) Recognized in Other Comprehensive Income on Derivatives			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Commodity contracts	\$ (3,555)	\$ 33,244	\$ 663	\$ 67,425

Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in Income on Derivatives	Amount of Gain (Loss) Recognized in Income on Derivatives			
		Three Months Ended September 30,		Nine Months Ended September 30,	
		2020	2019	2020	2019
Commodity contracts	Revenues	\$ (21,128)	\$ 12,439	\$ 8,681	\$ (12,034)
Commodity contracts	Costs of goods sold	4,184	5,465	10,678	(1,484)
Commodity contracts	Net loss from discontinued operations, net of income taxes	-	(2,285)	-	(2,470)
Net gain (loss) recognized in loss before income taxes		\$ (16,944)	\$ 15,619	\$ 19,359	\$ (15,988)

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

Line Item in the Consolidated Balance Sheet in Which the Hedged Item is Included	September 30, 2020		December 31, 2019	
	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	\$ 26,172	\$ 1,639	\$ 55,021	\$ (2,808)

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

The effect of cash flow and fair value hedges and the line items on the consolidated statements of operations where they are reported are as follows (in thousands):

	Location and Amount of Gain (Loss) Recognized in Income on Cash Flow and Fair Value Hedging Relationships for the Three Months Ended September 30,					
	2020			2019		
	Revenue	Cost of Goods Sold	Net Income from Discontinued Operations, Net of Income Taxes	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 reclassified from accumulated other comprehensive income into income	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 66,700
Gain (loss) on fair value hedging relationships:						
Commodity contracts:						
Hedged item	-	4,264	-	-	1,155	-
Derivatives designated as hedging instruments	-	(5,380)	-	-	(3,263)	-
Total amounts of income and expense line items presented in the statement of operations in which the effects of cash flow or fair value hedges are recorded	<u>\$ -</u>	<u>\$ (1,116)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (2,108)</u>	<u>\$ 66,700</u>

**Location and Amount of Gain (Loss) Recognized in
Income on Cash Flow and Fair Value Hedging Relationships
for the Nine Months Ended September 30,**

	2020			2019		
	Revenue	Cost of Goods Sold	Net Income from Discontinued Operations, Net of Income Taxes	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	\$ 8,824	\$ (2,901)	\$ -	\$ -	\$ -	\$ 48,797
Gain (loss) on fair value hedging relationships:						
Commodity contracts:						
Hedged item	-	(3,665)	-	-	324	-
Derivatives designated as hedging instruments	-	3,220	-	-	1,168	-
Total amounts of income and expense line items presented in the statement of operations in which the effects of cash flow or fair value hedges are recorded	<u>\$ 8,824</u>	<u>\$ (3,346)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 1,492</u>	<u>\$ 48,797</u>

There were no gains or losses from discontinuing cash flow or fair value hedge treatment during the three and nine months ended September 30, 2020 and 2019.

The open commodity derivative positions as of September 30, 2020, are as follows (in thousands):

Derivative Instruments	Exchange Traded ⁽¹⁾	Non-Exchange Traded ⁽²⁾		Unit of Measure	Commodity
	Net Long & (Short)	Long	(Short)		
Futures	26,520			Bushels	Corn and Soybeans
Futures	13,500 ⁽³⁾			Bushels	Corn
Futures	(2,390) ⁽⁴⁾			Bushels	Corn
Futures	(21,420)			Gallons	Ethanol
Futures	(45,360) ⁽³⁾			Gallons	Ethanol
Futures	(33,042)			MmBTU	Natural Gas
Futures	(7,048) ⁽⁴⁾			MmBTU	Natural Gas
Futures	25			Tons	Soybean Meal
Options	7			Tons	Soybean Meal
Options	(18,433)			Bushels	Corn
Options	(25,411)			Gallons	Ethanol
Options	(100)			MmBTU	Natural Gas
Forwards		25,434	(498)	Bushels	Corn and Soybeans
Forwards		13,492	(161,575)	Gallons	Ethanol
Forwards		98	(385)	Tons	Distillers Grains
Forwards		6,048	(62,919)	Pounds	Corn Oil
Forwards		5,607	(561)	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 or non-exchange traded forwards 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 losses on energy trading contracts of \$0.9 million and net gains on energy trading contracts of \$2.1 million for the three and nine months ended September 30, 2020, respectively, and net gains on energy trading contracts of \$2.1 million and \$11.4 million for the three and nine months ended September 30, 2019, respectively.

9. DEBT

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

	September 30, 2020	December 31, 2019
Corporate:		
\$170.0 million convertible notes due 2022 ⁽¹⁾	\$ 154,582	\$ 149,256
\$115.0 million convertible notes due 2024 ⁽²⁾	87,655	83,497
Green Plains Partners:		
\$135.0 million credit facility ⁽³⁾	118,200	132,100
Green Plains Wood River and Green Plains Shenandoah:		
\$75.0 million delayed draw loan agreement ⁽⁴⁾	10,000	-
Other	16,012	16,512
Total book value of long-term debt	386,449	381,365
Unamortized debt issuance costs	(7,015)	(4,820)
Less: current maturities of long-term debt	(34,378)	(132,555)
Total long-term debt	\$ 345,056	\$ 243,990

(1) Includes \$1.5 million and \$2.0 million of unamortized debt issuance costs as of September 30, 2020 and December 31, 2019, respectively.

(2) Includes \$2.4 million and \$2.8 million of unamortized debt issuance costs as of September 30, 2020 and December 31, 2019, respectively.

(3) The Green Plains Partners revolving credit facility was amended on June 4, 2020 and includes \$2.8 million of unamortized debt issuance costs as of September 30, 2020. 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 September 30, 2020.

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

	September 30, 2020	December 31, 2019
Green Plains Trade:		
\$300.0 million revolver	\$ 79,488	\$ 138,204
Green Plains Grain:		
\$100.0 million revolver	40,000	40,000
\$50.0 million inventory financing	5,920	-
Green Plains Commodity Management:		
\$30.0 million hedge line	21,206	9,608
	<u>\$ 146,614</u>	<u>\$ 187,812</u>

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. At September 30, 2020, 1.3 million bushels of corn had been designated as collateral under these agreements at initial values totaling \$5.6 million. 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. At September 30, 2020, the short-term notes payable were valued at \$5.9 million and were measured using Level 2 inputs.

Green Plains Commodity Management has an uncommitted \$30.0 million revolving credit facility which matures April 30, 2023 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 \$112.3 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 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 amount available under 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 revolver, and matures on December 31, 2021. The partnership made \$12.5 million in principal payments on the term loan during the three and nine months ended September 30, 2020. 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 addition, if at any time subsequent to July 15, 2020, the partnership's 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. 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 September 30, 2020, the term loan had a balance of \$117.5 million and an interest rate of 6.00% and the revolver had a balance outstanding of \$0.7 million at an interest rate of 7.25%.

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.

Covenant Compliance

The company was in compliance with its debt covenants as of September 30, 2020.

Restricted Net Assets

At September 30, 2020, there were approximately \$67.5 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.

10. STOCK-BASED COMPENSATION

The company had a 2009 Equity Incentive Plan which reserved a total of 4.1 million shares of common stock for issuance pursuant to the plan. On May 6, 2020, the shareholders of the company approved the 2019 Equity Incentive Plan which granted an additional 1.6 million shares for stock-based compensation, including options to purchase shares of common stock, stock appreciation rights tied to the value of common stock, restricted stock, restricted stock unit awards and performance share awards to eligible employees, non-employee directors and consultants. All shares remaining under the 2009 Equity Incentive Plan rolled into the 2019 Equity Incentive Plan effective May 6, 2020. 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.

Restricted Stock Awards and Deferred Stock Units

The non-vested stock award and deferred stock unit activity for the nine months ended September 30, 2020, is 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	645,827	9.75	
Forfeited	(20,301)	16.26	
Vested	(352,080)	18.83	
Non-Vested at September 30, 2020	1,024,761	\$ 12.17	1.8

Performance Shares

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 nine months ended September 30, 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 September 30, 2020	517,969	\$ 13.80	2.0

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 nine months ended September 30, 2020 and 2019.

The activity related to the exercisable stock options for the nine months ended September 30, 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 September 30, 2020	-	-	-	\$ -
Exercisable at September 30, 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 at fair value on the grant date, with no adjustments for estimated forfeitures. The partnership records noncash compensation expense related to the awards over the requisite service period on a straight-line basis.

The non-vested unit-based awards activity for the nine months ended September 30, 2020, is 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 September 30, 2020	47,620	\$ 6.72	0.8

Stock-Based and Unit Based Compensation Expense

Compensation costs for stock-based and unit-based payment plans were \$2.1 million and \$5.7 million for the three and nine months ended September 30, 2020, respectively, and \$2.6 million and \$7.4 million for the three and nine months ended September 30, 2019. At September 30, 2020, there was \$11.7 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 1.8 years. The potential tax benefit related to stock-based payment is approximately 24.2% of these expenses.

11. 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, except per share amounts):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Numerator:				
Net loss from continuing operations ⁽¹⁾	\$ (34,486)	\$ (42,363)	\$ (59,145)	\$ (128,077)
Net income from discontinued operations	-	3,393	-	966
Net loss attributable to Green Plains	\$ (34,486)	\$ (38,970)	\$ (59,145)	\$ (127,111)
Denominator:				
Weighted-average shares outstanding - basic	34,629	36,913	34,632	39,092
Dilutive effect of convertible debt and stock-based compensation ⁽²⁾	-	-	-	-
Weighted-average shares outstanding - diluted	34,629	36,913	34,632	39,092
EPS - basic and diluted:				
EPS from continuing operations	\$ (1.00)	\$ (1.15)	\$ (1.71)	\$ (3.28)
EPS from discontinued operations	-	0.09	-	0.03
EPS	\$ (1.00)	\$ (1.06)	\$ (1.71)	\$ (3.25)
Anti-dilutive weighted-average convertible debt and stock-based compensation ⁽²⁾	14,187	13,983	14,059	9,397

(1) Net loss from continuing operations can be recalculated from our consolidated statements of operations by taking the net loss from continuing operations including noncontrolling interest less net income attributable to noncontrolling interests.

(2) The effect related to the company's convertible debt and stock-based compensation awards have been excluded from diluted EPS for the periods presented as the inclusion of these shares would have been antidilutive.

12. STOCKHOLDERS' EQUITY

Components of stockholders' equity for the three and nine months ended September 30, 2020 and 2019 are as follows (in thousands):

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accum. Other Comp. Income	Treasury Stock		Total Green Plains Stockholders' Equity	Non- Controlling Interests	Total Stockholders' Equity
	Shares	Amount				Shares	Amount			
Balance, January 1, 2020	46,964	\$ 47	\$ 734,580	\$ 148,150	(11,064)	10,932	\$(119,808)	\$ 751,905	\$ 113,381	\$ 865,286
Net income (loss)	-	-	-	(16,445)	-	-	-	(16,445)	6,098	(10,347)
Distributions declared	-	-	-	-	-	-	-	-	(5,498)	(5,498)
Other comprehensive loss before reclassification	-	-	-	-	4,532	-	-	4,532	-	4,532
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	(4,485)	-	-	(4,485)	-	(4,485)
Other comprehensive income, net of tax	-	-	-	-	47	-	-	47	-	47
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	41,956	-	-	41,956	-	41,956
Repurchase of common stock	-	-	-	-	-	881	(11,479)	(11,479)	-	(11,479)
Stock-based compensation	343	-	36	-	-	-	-	36	79	115
Balance, March 31, 2020	47,307	47	734,616	131,705	30,939	11,813	\$(131,287)	766,020	114,060	880,080
Net income (loss)	-	-	-	(8,214)	-	-	-	(8,214)	2,740	(5,474)
Distributions declared	-	-	-	-	-	-	-	-	(1,389)	(1,389)
Other comprehensive loss before reclassification	-	-	-	-	(1,333)	-	-	(1,333)	-	(1,333)
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	(7)	-	-	(7)	-	(7)
Other comprehensive income, net of tax	-	-	-	-	(1,340)	-	-	(1,340)	-	(1,340)
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	(16,759)	-	-	(16,759)	-	(16,759)
Stock-based compensation	160	-	2,072	-	-	-	-	2,072	80	2,152
Balance, June 30, 2020	47,467	47	736,688	123,491	12,840	11,813	\$(131,287)	741,779	115,491	857,270
Net income (loss)	-	-	-	(34,486)	-	-	-	(34,486)	3,753	(30,733)
Distributions declared	-	-	-	-	-	-	-	-	(1,394)	(1,394)
Other comprehensive loss before reclassification	-	-	-	-	(2,696)	-	-	(2,696)	-	(2,696)
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	-	-	-	-	-	-
Other comprehensive income, net of tax	-	-	-	-	(2,696)	-	-	(2,696)	-	(2,696)
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	(21,057)	-	-	(21,057)	-	(21,057)
Stock-based compensation	-	-	2,086	-	-	-	-	2,086	79	2,165
Balance, September 30, 2020	47,467	\$ 47	\$ 738,774	\$ 89,005	(10,913)	11,813	\$(131,287)	\$ 685,626	\$ 117,929	\$ 803,555

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accum. Other Comp. Income	Treasury Stock		Total Green Plains Stockholders' Equity	Non- Controlling Interests	Total Stockholders' Equity
	Shares	Amount				Shares	Amount			
Balance, January 1, 2019	46,638	\$ 47	\$ 696,222	\$ 324,728	(16,016)	5,536	\$(58,162)	\$ 946,819	\$ 116,170	\$ 1,062,989
Net income (loss)	-	-	-	(42,799)	-	-	-	(42,799)	4,928	(37,871)
Cash dividends and distributions declared	-	-	-	(4,847)	-	-	-	(4,847)	(5,487)	(10,334)
Other comprehensive loss before reclassification	-	-	-	-	(6,883)	-	-	(6,883)	-	(6,883)
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	10,376	-	-	10,376	-	10,376
Other comprehensive income, net of tax	-	-	-	-	3,493	-	-	3,493	-	3,493
Proceeds from disgorgement of shareholders short-swing profits, net ⁽¹⁾	-	-	5,023	-	-	-	-	5,023	-	5,023
Stock-based compensation	284	-	428	-	-	-	-	428	79	507
Balance, March 31, 2019	46,922	47	701,673	277,082	(12,523)	5,536	\$(58,162)	908,117	115,690	1,023,807
Net income (loss)	-	-	-	(45,342)	-	-	-	(45,342)	5,163	(40,179)
Cash dividends and distributions declared	-	-	-	(4,871)	-	-	-	(4,871)	(5,487)	(10,358)
Other comprehensive loss before reclassification	-	-	-	-	33,260	-	-	33,260	-	33,260
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	3,440	-	-	3,440	-	3,440
Other comprehensive income, net of tax	-	-	-	-	36,700	-	-	36,700	-	36,700
Issuance of 4.00% convertible notes due 2024, net of tax	-	-	22,537	-	-	-	-	22,537	-	22,537
Settlement of 3.25% convertible notes due 2019, net of tax	-	-	(271)	-	-	-	-	(271)	-	(271)
Repurchase of common stock	-	-	-	-	-	3,197	\$(39,870)	\$(39,870)	-	\$(39,870)
Stock-based compensation	(3)	-	2,129	-	-	-	-	2,129	79	2,208
Balance, June 30, 2019	46,919	47	726,068	226,869	24,177	8,733	\$(98,032)	879,129	115,445	994,574
Net income (loss)	-	-	-	(38,970)	-	-	-	(38,970)	3,479	(35,491)
Cash dividends and distributions declared	-	-	-	-	-	-	-	-	(5,497)	(5,497)
Other comprehensive loss before reclassification	-	-	-	-	28,095	-	-	28,095	-	28,095
Amounts reclassified from accumulated other comprehensive loss	-	-	-	-	(53,255)	-	-	(53,255)	-	(53,255)
Other comprehensive income, net of tax	-	-	-	-	(25,160)	-	-	(25,160)	-	(25,160)
Share of equity method investees other comprehensive loss arising during the period, net of tax	-	-	-	-	(10,771)	-	-	(10,771)	-	(10,771)
Issuance of 4.00% convertible notes due 2024, net of tax	-	-	2,231	-	-	-	-	2,231	-	2,231
Repurchase of common stock	-	-	-	-	-	1,663	\$(16,014)	\$(16,014)	-	\$(16,014)
Stock-based compensation	(4)	-	2,509	-	-	-	-	2,509	81	2,590
Balance, September 30, 2019	46,915	47	730,808	187,899	(11,754)	10,396	\$(114,046)	792,954	113,508	906,462

(1) During the three months ended March 31, 2019, the company received \$6.7 million from a shareholder of the company for disgorgement of shareholder short-swing profits under Section 16(b) under the Exchange Act. The amount was recorded as an increase to additional paid-in capital, net of tax.

Amounts reclassified from accumulated other comprehensive income are as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,		Statements of Operations Classification
	2020	2019	2020	2019	
Gains (losses) on cash flow hedges:					
Commodity derivatives	\$ -	\$ -	\$ 8,824	\$ -	(1)
Commodity derivatives	-	-	(2,901)	-	(2)
Total gains on cash flow hedges from continuing operations	-	-	5,923	-	(3)
Income on cash flow hedges from discontinued operations, net of income taxes	-	53,255	-	39,439	(4)
Income tax expense	-	-	(1,431)	-	(5)
Amounts reclassified from accumulated other comprehensive income (loss)	\$ -	\$ 53,255	\$ 4,492	\$ 39,439	

- (1) Revenues
- (2) Costs of goods sold
- (3) Loss from continuing operations before income taxes and income from equity method investees
- (4) Net income from discontinued operations, net of income taxes
- (5) Income tax benefit (expense)

13. INCOME TAXES

The company records actual income tax expense or benefit during interim periods rather than on an annual effective tax rate method. Certain items are given discrete period treatment and the tax effect of those items are reported in full in the relevant interim period. 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 income taxes on pre-tax income or loss attributable to the noncontrolling interest in the partnership.

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 the COVID-19. In the first quarter, the company recorded an income tax benefit related to the expected NOL carry back claim of \$28.4 million which was an estimate based on the amount of NOL rated to the 2019 year-end tax provision. In the second quarter, 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. The company recorded an additional income tax benefit of approximately \$5.5 million during the second quarter related to the CARES Act in addition to adjustments to certain valuation allowances. In the third quarter no additional tax benefit was recorded related to the CARES Act.

The company recorded income tax expense of \$7.3 million and income tax benefit of \$48.5 million for the three and nine months ended September 30, 2020, compared with income tax benefit of \$12.5 million and \$40.7 million for the same periods in 2019. The income tax expense recorded for the three months ended September 30, 2020, as compared to income tax benefit for the same period in 2019, was primarily due to the recording of a valuation allowance against increases in deferred tax assets in the third quarter. The increase in the amount of the tax benefit recorded for the nine months ended September 30, 2020 compared to the same period in 2019 was to record the tax benefit in 2020 associated with the carry back of the tax NOL generated in 2019 to the 2014 tax year under the newly enacted CARES Act, offset by the release of a previously recorded valuation allowance against the 2019 NOL and other deferred tax assets. The amount of unrecognized tax benefits for uncertain tax positions was \$51.6 million as of September 30, 2020 and December 31, 2019.

The 2020 effective tax rate can be affected by variances in the estimates and amounts of taxable income among the various states, entities and activity types, realization of tax credits, adjustments from resolution of tax matters under review, valuation allowances and the company's assessment of its liability for uncertain tax positions.

14. COMMITMENTS AND CONTINGENCIES

Lease Expense

The company leases certain facilities, parcels of land, and equipment, with remaining terms ranging from less than one year to 17.1 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 components of lease expense are as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Lease expense				
Operating lease expense	\$ 5,232	\$ 4,944	\$ 15,432	\$ 15,899
Variable lease expense ⁽¹⁾	530	250	1,429	643
Total lease expense	<u>\$ 5,762</u>	<u>\$ 5,194</u>	<u>\$ 16,861</u>	<u>\$ 16,542</u>

(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):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flows from operating leases	\$ 5,136	\$ 4,977	\$ 15,004	\$ 15,913
Right-of-use assets obtained in exchange for lease obligations:				
Operating leases	11,053	4,427	17,932	10,634
Right-of-use assets and lease obligations derecognized due to lease modifications:				
Operating leases	12	1,405	12	1,405

Supplemental balance sheet information related to operating leases is as follows:

	September 30, 2020	December 31, 2019
Weighted average remaining lease term	6.4 years	6.6 years
Weighted average discount rate	5.01%	5.46%

Aggregate minimum lease payments under the operating lease agreements for the remainder of 2020 and in future years are as follows (in thousands):

Year Ending December 31,	Amount
2020	\$ 5,565
2021	15,451
2022	13,392
2023	9,812
2024	7,997
Thereafter	19,642
Total	71,859
Less: Present value discount	(11,836)
Lease liabilities	\$ 60,023

The partnership has additional railcar operating leases that will commence in the fourth quarter of 2020 and the first half of 2021 to replace expiring leases, with estimated future minimum lease commitments of approximately \$24.5 million and lease terms of five to six years. Additionally, the company has an operating lease for a building commencing during the fourth quarter of 2020 with estimated future minimum lease commitments of approximately \$1.2 million and a lease term of five years. The undiscounted amounts are not included in the tables above.

Lease Revenue

As described in *Note 2 – Revenue*, the majority of the partnership’s segment revenue is generated through 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 2 – Revenue* for further discussion on lease revenue.

Commodities

As of September 30, 2020, the company had contracted future purchases of grain, corn oil, natural gas, ethanol and distillers grains, valued at approximately \$187.9 million.

Legal

The company is currently involved in litigation that has arisen during 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.

15. RELATED PARTY TRANSACTIONS

Green Plains Cattle Company LLC

The company engages in certain related party transactions with GPCC. The company provides a variety of shared services to GPCC, including accounting and finance, payroll and human resources, information technology, legal, communications and treasury activities. The shared services provided by the company and billed to GPCC were \$0.4 million and \$1.2 million for the three and nine months ended September 30, 2020, respectively, and \$0.1 million for the three and nine months ended September 30, 2019. The company had \$1.5 million and \$2.2 million of outstanding receivables related to the shared service agreement and expenses paid on behalf of GPCC as of September 30, 2020 and December 31, 2019, respectively. As of September 30, 2020, the company also had an additional \$2.0 million outstanding receivable related to the GPCC bonus provision.

Green Plains Trade Group, a subsidiary of the company, enters into certain sale contracts with GPCC during the normal course of business. Revenues were \$2.2 million and \$8.2 million for the three and nine months ended September 30, 2020, respectively, and \$0.7 million for both the three and nine months ended September 30, 2019.

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 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 and receives usual and customary advisory fees.

Aircraft Leases

Effective January 1, 2015, 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. The company agreed to pay \$9,766 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. Given the limited amount of travel during the nine months ended September 30, 2020, the companies have agreed to defer the monthly payment until excess carryover hours are used. Once those hours are utilized, the companies will re-evaluate its arrangements. Payments related to these leases totaled \$6 thousand and \$30 thousand during the three and nine months ended September 30, 2020, respectively, and \$37 thousand and \$106 thousand during the three and nine months ended September 30, 2019, respectively. The company had \$0 in outstanding payables related to these agreements as of September 30, 2020 and \$17 thousand in outstanding payables related to these agreements as of December 31, 2019.

16. EQUITY METHOD INVESTMENTS

Green Plains Cattle Company LLC

On September 1, 2019, Green Plains, TGAM and StepStone entered into the Second Amended and Restated Limited Liability Company Agreement of GPCC. 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 is no longer consolidated in the company's consolidated financial statements and the GPCC investment is 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.

The GPCC investment is accounted for using the equity method of accounting. 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 11.7 million bushels of grain storage capacity. Historical GPCC operational results prior to its disposition are recorded as discontinued operations in the consolidated statement of operations.

The company does 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 increases or decreases, as applicable, the carrying value of the investment. With respect to GPCC, the company determined that this entity does not represent a variable interest entity and consolidation is not required. In addition, although the company has the ability to exercise significant influence over the joint venture through board representation and voting rights, all significant decisions require the consent of the other investors without regard to economic interest.

Subsequent to September 30, 2020, the company sold its remaining interest in GPCC. Refer to *Note 17 – Subsequent Events* for further discussion.

Summarized Financial Information

Our equity method investments are summarized in the following tables (in thousands):

	Ownership as of September 30, 2020	September 30, 2020	December 31, 2019
Green Plains Cattle Company LLC ⁽¹⁾	50%	\$ 69,745	\$ 64,161
Other	Various	3,818	4,837
Total		\$ 73,563	\$ 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. Pre-tax accumulated other comprehensive loss for GPCC was \$10.7 million as of September 30, 2020 compared to pre-tax accumulated other comprehensive loss of \$16.2 million as of December 31, 2019.

Earnings from equity method investments were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Green Plains Cattle Company LLC ⁽¹⁾	\$ 775	\$ 504	\$ 20,531	\$ 504
All others	131	140	386	30
Total income from equity method investments, net of income taxes	<u>\$ 906</u>	<u>\$ 644</u>	<u>\$ 20,917</u>	<u>\$ 534</u>
Distributions from equity method investments	<u>\$ 13,584</u>	<u>\$ -</u>	<u>\$ 27,910</u>	<u>\$ -</u>
Income (loss) from equity method investments, net of distributions	<u>\$ (12,678)</u>	<u>\$ 644</u>	<u>\$ (6,993)</u>	<u>\$ 534</u>

(1) Pre-tax equity method earnings of GPCC were \$1.0 million and \$27.0 million for the three and nine months ended September 30, 2020, respectively and \$0.5 million for both the three and nine months September 30, 2019. GPCC equity method treatment began on September 1, 2019, and as such, the prior year balances above represent balances for the one-month period ending September 30, 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 accompanying balance sheet.

The following table present summarized information of GPCC.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019 ⁽¹⁾	2020	2019 ⁽¹⁾
Total revenues	\$ 257,292	\$ 86,932	\$ 747,824	\$ 86,932
Total operating expenses	255,315	85,925	693,753	85,925
Net income	<u>\$ 1,977</u>	<u>\$ 1,007</u>	<u>\$ 54,071</u>	<u>\$ 1,007</u>

(1) GPCC equity method treatment began on September 1, 2019, as such balances for the three and nine month periods above represent summarized financials for the one-month period ending September 30, 2019.

	September 30, 2020	December 31, 2019
Balance sheet:		
Current assets	\$ 498,868	\$ 516,324
Noncurrent assets	70,893	73,922
Current liabilities	429,922	461,534
Noncurrent liabilities	349	390
Net assets	<u>\$ 139,490</u>	<u>\$ 128,322</u>

17. SUBSEQUENT EVENTS

Disposition of Equity Interest in Green Plains Cattle Company LLC

On October 9, 2020, pursuant to the Securities Purchase Agreement, the company sold its remaining 50% joint venture interest in GPCC to AGR Special Opportunities Fund I, LP, 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 will result 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 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.

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

General

The following discussion and analysis provides information we believe is relevant to understand our consolidated financial condition and results of operations. This discussion should be read in conjunction with the consolidated financial statements and notes to the consolidated financial statements contained in this report together with our annual report on Form 10-K for the year ended December 31, 2019.

Cautionary Information Regarding Forward-Looking Statements

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 that 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 may be identified by words such as “anticipate,” “believe,” “continue,” “estimate,” “expect,” “intend,” “outlook,” “plan,” “predict,” “may,” “could,” “should,” “will” and similar expressions, 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 in the forward-looking statements include, but are not limited to, those discussed in Part I, Item 1A – Risk Factors of our annual report on Form 10-K for the year ended December 31, 2019, Part II, Item 1A – Risk Factors in this report, 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 acquisition 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.

Overview

With the recent disposition of our remaining ownership in GPCC, we continue to 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 as well 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 second quarter of 2021. We anticipate that additional locations will be completed over the course of the next several years as we continue to move us toward a true bio-refining platform.

We continue to be one of the leading corn processors in the world and, through our adjacent businesses, are focused on the production of ultra-high protein and export growth opportunities. Green Plains Partners LP is our primary downstream logistics provider, storing and delivering the ethanol we produce. 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. In addition, until its disposition on October 1, 2020, Green Plains owned a 50% interest in Green Plains Cattle Company.

Recent Developments

Disposition of Equity Interest in Green Plains Cattle Company LLC

On October 9, 2020, pursuant to the Securities Purchase Agreement, we sold our remaining 50% joint venture interest in GPCC to AGR Special Opportunities Fund I, LP, 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 will result 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 of \$10.7 million as a result of the removal of our 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 in the consolidated financial statements when the amount is probable and reasonably determinable or the consideration is realized.

Impact of COVID-19 and Decline in Oil 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 during the three and nine months ended September 30, 2020 from COVID-19, we are unable to predict the impact that COVID-19 will have on our future financial position and operating results due to numerous uncertainties.

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 oil demand remains highly uncertain and subject to change.

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.

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

Results of Operations

During the third quarter of 2020, we continued to experience a weak ethanol margin environment. We maintained an average utilization rate of approximately 66.8% of capacity, resulting in ethanol production of 189.2 mmg for the third quarter of 2020, compared with 238.4 mmg, or 84.2% of capacity, for the same quarter last 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 bio-refineries variable contribution margin, including future driving and gasoline demand for the industry.

U.S. Ethanol Supply and Demand

According to the EIA, domestic ethanol production averaged 0.92 million barrels per day during the third quarter of 2020, which was 10% lower than the 1.02 million barrels per day for the same quarter last year. Refiner and blender input volume decreased 10% to 0.85 million barrels per day for the third quarter of 2020, compared with 0.94 million barrels per day for the same quarter last year. Gasoline demand for the third quarter of 2020 decreased 0.87 million barrels per day, or 9% compared to the same quarter last year. U.S. domestic ethanol ending stocks decreased by approximately 3.5 million barrels, or 15%, to 19.7 million barrels for the third quarter of 2020. At the end of May 2019, the EPA finalized regulations applying the one pound per square inch Reid Vapor Pressure (RVP), waiver which applied to E10 during summer months, to apply to E15 as well. This removed a significant barrier to wider sales of E15 in the summer months, thus expanding the market for ethanol in transportation fuel. As of September 30, 2020, according to Prime the Pump, there were approximately 2,250 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 August 31, 2020 were approximately 0.9 bgy, down 10% from 1.00 bgy for the same period of 2019. Canada moved ahead of Brazil as the largest export destination for U.S. ethanol, which accounted for 22% of domestic ethanol export volume. Brazil, India, and South Korea accounted for 20%, 16%, and 8%, respectively, of U.S. ethanol exports.

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, China has started purchasing more distillers grains than last year, and 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 12.4 cents per pound during the third quarter of 2020. We currently estimate that net ethanol exports will range from 1.2 billion to 1.4 billion gallons in 2020, 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.

Year-to-date U.S. distillers grains exports through August 31, 2020, were 7.1 million metric tons, or 3.1% lower than the same period last year, according to the USDA Foreign Agriculture Service. Mexico, South Korea, Vietnam, Thailand, Indonesia, and Turkey, accounted for approximately 64.3% 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. 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 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. 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 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 a number of states.

The RFS II has been a driving factor in the growth of 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 (ethanol production) and demand (usage of ethanol blends in older vehicles). On December 19, 2019, the EPA announced the final 2020 RVO for conventional ethanol, which met the 15.0-billion-gallon congressional target. The EPA has not yet

released a draft RVO rule for the 2021 volumes. They typically do so in June or July, and aim to finalize the rule by November 30 each year. It is unclear when they will release the RVO for 2021, if at all.

The EPA has the authority to waive the biofuel mandate, in whole or in part, if there is inadequate domestic renewable fuel supply or the requirement severely harms the domestic economy or environment. 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, 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.

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.

On April 15, 2020, five Governors sent a letter to the EPA requesting a general waiver from the RFS due to the drop in demand caused by COVID-19 travel restrictions. They contend that the compliance costs – i.e. cost to purchase RINs – is onerous and could put some refineries out of business. The EPA has 90 days to respond, and as of this filing had indicated only that they are “watching the situation closely, and reviewing the governors’ letter.”

On October 21, 2020, 15 Senate Republicans sent a letter to the EPA requesting a general waiver from the RFS to reduce the 2021 RVO, which has not yet been proposed, citing the reduced demand for fuels due to COVID-19. The letter also asked that the 500 million gallon court-ordered remand be ignored, and that any gallons previously exempted through small refineries exemptions not be reallocated among obligated parties.

Under the RFS II, 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.

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 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 are adding 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, which should be adjudicated in 2020.

On January 24, 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. 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. On September 14, 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. We believe that they will apply the same standard and deny the remaining ten gap year requests. Without a string of continuous SRE approvals, almost every small refinery would no longer be able to apply for hardship relief in this manner, unless the Supreme Court takes up and 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 has indicated it could soon move forward with notice of proposed rulemaking on E15 labeling reforms. On September 12, 2020 President Trump announced his support for amending federal regulations to allow for E15 to be sold through E10 pumps, however federal agencies have yet to take formal action on this directive.

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.

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 or could impact 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 USDA did not include any CCC program funds for supporting ethanol plants as of this filing.

The CARES Act provided for the Small Business Administration (SBA) to assist companies with fewer than 500 employees, and for some North American Industry Classification System (NAICS) codes, 1,000 employees, and keep them from laying off workers. The Paycheck Protection Program (PPP) was created and made payments to many farmers and ethanol plants with fewer than 1,000 employees. This could create a competitive imbalance in the marketplace, and for farmers, like the CCC funds, incentivize them to delay marketing corn. The PPP had its authorization increased by \$321 billion in April.

The CARES Act also directed the Treasury Department to create programs to support medium-sized businesses, with fewer than 10,000 employees. The "Main Street" programs provide low interest loans to qualifying companies, though we do not qualify according to the most recent guidance from the Treasury Department.

Industrial grade ethanol is the primary ingredient in hand sanitizer. The CARES Act provided a tax exclusion on the shipment of un-denatured ethanol for use in manufacturing hand sanitizer. The FDA has 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 which on July 25, 2020 was extended another 90 days by the U.S. Secretary of Health and Human Services. We believe it is likely the public health crisis declaration will be extended again.

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. To date in 2020, there have been no meaningful purchases of U.S. ethanol by China.

In Brazil, the Secretary of Foreign Trade issued an official written resolution, imposing a 20% tariff rate quota on U.S. ethanol imports in excess of 150 million liters, or 39.6 mmg per quarter in September 2017. The initial ruling was valid for two years; however, it was extended at the end of August 2019 for an additional year. On an annual basis, Brazil will now allow into the country 750 million duty free liters distributed on a quarterly basis as follows: September to November 100 million liters, December to February 100 million liters, March to May 275 million liters and June to August 275 million liters. After briefly expiring on September 1, 2020, the tariff rate quota was extended for 90 days on September 14, 2020.

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. 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 26, 2021. U.S. ethanol exports to Mexico totaled 31.2 mmg in 2019.

On January 29, 2020, President Trump signed into law the updated North American Free Trade Agreement, known as the United States Mexico Canada Agreement or USMCA. The pact maintains the duty free access of U.S. agricultural commodities, including ethanol, into Canada and Mexico. The USMCA went into effect on July 1, 2020.

Colombia banned imports of U.S. fuel ethanol for two months, and on June 30th extended the ban one additional month. The Colombian President ordered this emergency decree citing COVID-19 as the rationale. This action is WTO compliant under Article 20 of the GATT. In 2019, the U.S. shipped Columbia 80.2 mmg of ethanol.

Comparability of our Financial 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 and (4) partnership, which includes fuel storage and transportation services.

We sold an aggregate 50% membership interest in GPCC to TGAM and StepStone during the third quarter of 2019. After closing, GPCC is no longer consolidated in the company's consolidated financial statements and the GPCC investment is accounted for using the equity method of accounting. The company concluded that the disposition of GPCC met the requirements under ASC 205-20. Therefore, GPCC results for the three and nine months ended September 30, 2019 are classified as discontinued operations.

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. When we evaluate segment performance, we review the following segment information as well as earnings before interest, income taxes, depreciation and amortization, excluding amortization of operating lease right-of-use assets and amortization of debt issuance costs, or EBITDA.

The company also owns a 90.0% interest in BioProcess Algae, a joint venture formed in 2008. We consolidate the financial results of BioProcess Algae, and record a noncontrolling interest for the economic interest in the joint venture held by others.

As of September 30, 2020, we, together with our subsidiaries, own a 48.9% limited partner interest and a 2.0% general partner interest in the partnership and own all of the partnership's incentive distribution rights, with the remaining 49.1% limited partner interest owned by public common unitholders. We consolidate the financial results of the partnership, and record a noncontrolling interest for the economic interest in the partnership held by the public common unitholders.

Segment Results

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

	Three Months Ended September 30,		% Variance	Nine Months Ended September 30,		% Variance
	2020	2019		2020	2019	
Revenues:						
Ethanol production:						
Revenues from external customers	\$ 332,953	\$ 484,382	(31.3%)	\$ 1,099,170	\$ 1,206,107	(8.9%)
Intersegment revenues	25	24	4.2	75	75	*
Total segment revenues	<u>332,978</u>	<u>484,406</u>	(31.3)	<u>1,099,245</u>	<u>1,206,182</u>	(8.9)
Agribusiness and energy services:						
Revenues from external customers	90,074	146,650	(38.6)	342,078	488,687	(30.0)
Intersegment revenues	5,354	7,293	(26.6)	17,030	19,432	(12.4)
Total segment revenues	<u>95,428</u>	<u>153,943</u>	(38.0)	<u>359,108</u>	<u>508,119</u>	(29.3)
Food and ingredients:						
Revenues from external customers	-	-	-	-	1,451	*
Intersegment revenues	-	-	-	-	-	-
Total segment revenues	<u>-</u>	<u>-</u>	-	<u>-</u>	<u>1,451</u>	*
Partnership:						
Revenues from external customers	1,035	1,318	(21.5)	3,707	5,315	(30.3)
Intersegment revenues	20,347	18,836	8.0	58,327	56,751	2.8
Total segment revenues	<u>21,382</u>	<u>20,154</u>	6.1	<u>62,034</u>	<u>62,066</u>	(0.1)
Revenues including intersegment activity	449,788	658,503	(31.7)	1,520,387	1,777,818	(14.5)
Intersegment eliminations	(25,726)	(26,153)	(1.6)	(75,432)	(76,258)	(1.1)
Revenues as reported	<u>\$ 424,062</u>	<u>\$ 632,350</u>	(32.9%)	<u>\$ 1,444,955</u>	<u>\$ 1,701,560</u>	(15.1%)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2020	2019	% Variance	2020	2019	% Variance
Cost of goods sold:						
Ethanol production	\$ 330,162	\$ 512,527	(35.6%)	\$ 1,103,486	\$ 1,289,366	(14.4%)
Agribusiness and energy services	87,027	150,465	(42.2)	339,332	486,305	(30.2)
Food and ingredients	-	3	*	-	1,526	*
Intersegment eliminations	(23,256)	(30,866)	(24.7)	(70,761)	(76,716)	(7.8)
	<u>\$ 393,933</u>	<u>\$ 632,129</u>	(37.7%)	<u>\$ 1,372,057</u>	<u>\$ 1,700,481</u>	(19.3%)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2020	2019	% Variance	2020	2019	% Variance
Operating income (loss):						
Ethanol production ⁽¹⁾	\$ (21,351)	\$ (49,289)	(56.7%)	\$ (100,924)	\$ (147,366)	(31.5%)
Agribusiness and energy services	4,296	(461)	*	7,207	9,184	(21.5)
Food and ingredients	-	(6)	*	-	(76)	*
Partnership	12,986	12,322	5.4	37,641	38,029	(1.0)
Intersegment eliminations	(2,447)	4,738	*	(4,597)	533	*
Corporate activities	(7,689)	(9,669)	(20.5)	(27,228)	(27,952)	(2.6)
	<u>\$ (14,205)</u>	<u>\$ (42,365)</u>	(66.5%)	<u>\$ (87,901)</u>	<u>\$ (127,648)</u>	(31.1%)

(1) Operating loss for ethanol production includes a goodwill impairment charge of \$24.1 million for the nine months ended September 30, 2020.

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2020	2019	% Variance	2020	2019	% Variance
Depreciation and amortization:						
Ethanol production	\$ 17,493	\$ 15,547	12.5%	\$ 50,575	\$ 46,324	9.2%
Agribusiness and energy services	655	541	21.1	1,764	1,642	7.4
Partnership	940	991	(5.1)	2,867	2,747	4.4
Corporate activities	665	749	(11.2)	2,002	2,250	(11.0)
	<u>\$ 19,753</u>	<u>\$ 17,828</u>	10.8%	<u>\$ 57,208</u>	<u>\$ 52,963</u>	8.0%

* Percentage variance not considered meaningful.

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 change in 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 and noncash goodwill impairment. 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 loss from continuing operations including noncontrolling interest to adjusted EBITDA (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Net loss from continuing operations including noncontrolling interest	\$ (30,733)	\$ (38,884)	\$ (46,554)	\$ (114,507)
Interest expense	10,169	10,548	29,536	31,528
Income tax expense (benefit), net of equity method income tax expense	7,518	(12,530)	(41,957)	(40,692)
Depreciation and amortization ⁽¹⁾	19,753	17,828	57,208	52,963
EBITDA	6,707	(23,038)	(1,767)	(70,708)
EBITDA adjustments related to discontinued operations	-	8,469	-	17,703
Proportional share of EBITDA adjustments to equity method investees	2,071	1,186	7,049	1,827
Noncash goodwill impairment	-	-	24,091	-
Adjusted EBITDA	\$ 8,778	\$ (13,383)	\$ 29,373	\$ (51,178)

(1) Excludes the change in operating lease right-of-use assets and amortization of debt issuance costs.

The following table reconciles segment EBITDA to consolidated adjusted EBITDA (in thousands):

	Three Months Ended September 30,		% Variance	Nine Months Ended September 30,		% Variance
	2020	2019		2020	2019	
Adjusted EBITDA:						
Ethanol production	\$ (3,856)	\$ (33,787)	88.6%	\$ (49,588)	\$ (101,027)	50.9%
Agribusiness and energy services	4,950	(75)	*	9,115	10,686	(14.7)
Food and ingredients	-	(7)	*	-	(76)	*
Partnership	14,082	13,594	3.6	40,996	41,382	(0.9)
Intersegment eliminations	(2,447)	4,738	*	(4,597)	533	*
Corporate activities ⁽¹⁾	(6,022)	(7,501)	19.7	2,307	(22,206)	110.4
EBITDA	6,707	(23,038)	129.1	(1,767)	(70,708)	97.5
EBITDA adjustments related to discontinued operations	-	8,469	*	-	17,703	*
Proportional share of EBITDA adjustments to equity method investees	2,071	1,186	*	7,049	1,827	*
Noncash goodwill impairment	-	-	*	24,091	-	*
Adjusted EBITDA	\$ 8,778	\$ (13,383)	165.6%	\$ 29,373	\$ (51,178)	157.4%

(1) Includes corporate expenses, offset by earnings from equity method investments of \$0.6 million and \$20.4 million for the three and nine months ended September 30, 2020, respectively.

* Percentage variance not considered meaningful.

Three Months Ended September 30, 2020 Compared with the Three Months Ended September 30, 2019

Consolidated Results

Consolidated revenues decreased \$208.3 million for the three months ended September 30, 2020 compared with the same period in 2019 primarily due to lower production volumes of ethanol, distillers grains and corn oil and decreased trading revenues within our agribusiness and energy services segment.

Operating loss decreased \$28.2 million and adjusted EBITDA increased \$22.2 million for the three months ended September 30, 2020 compared with the same period last year primarily due to improved margins on ethanol production. Interest expense decreased \$0.4 million for the three months ended September 30, 2020 compared with the same period in 2019. Income tax expense was \$7.3 million for the three months ended September 30, 2020 compared with income tax

benefit of \$12.5 million for the same period in 2019 due to the recording of a valuation allowance against tax NOLs arising during the three months ended September 30, 2020 and a decrease in pre-tax loss in the same period in 2019.

The following discussion provides greater detail about our third quarter segment performance.

Ethanol Production Segment

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

	Three Months Ended September 30,		% Variance
	2020	2019	
Ethanol sold (thousands of gallons)	189,202	238,473	(20.7)
Distillers grains sold (thousands of equivalent dried tons)	479	617	(22.4)
Corn oil sold (thousands of pounds)	50,953	60,607	(15.9)
Corn consumed (thousands of bushels)	65,284	82,730	(21.1)

Revenues in our ethanol production segment decreased \$151.4 million for the three months ended September 30, 2020 compared with the same period in 2019 primarily due to lower production volumes of ethanol, distillers grains and corn oil.

Cost of goods sold for our ethanol production segment decreased \$182.4 million for the three months ended September 30, 2020 compared with the same period last year primarily due to lower production volumes, as well as lower production costs. Operating loss decreased \$27.9 million and EBITDA increased \$29.9 million for the three months ended September 30, 2020 compared with the same period in 2019 primarily due to improved margins, primarily related to the sale of industrial-grade alcohol and ultra-high protein. Depreciation and amortization expense for the ethanol production segment was \$17.5 million for the three months ended September 30, 2020 compared with \$15.5 million for the same period last year.

Agribusiness and Energy Services Segment

Revenues in our agribusiness and energy services segment decreased \$58.5 million while operating income increased \$4.8 million and EBITDA increased by \$5.0 million for the three months ended September 30, 2020 compared with the same period in 2019. The decrease in revenues was primarily due to a decrease in ethanol, distillers grain and corn oil trading activity driven by lower production volumes, as well as lower average realized prices for ethanol. Operating income and EBITDA increased primarily as a result of higher margins.

Food and Ingredients Segment

The food and ingredients segment, which now represents food-grade corn oil production had no activity during the three months ended September 30, 2020.

Partnership Segment

Revenues generated by our partnership segment increased \$1.2 million for the three months ended September 30, 2020, compared with the same period for 2019. Storage and throughput service revenue increased \$0.7 million due to an increase in the rate per gallon charged to Green Plains Trade beginning July 1, 2020. Railcar transportation service revenue increased \$0.5 million primarily due to an increase in average volumetric capacity provided and the average capacity fee charged. Operating income increased \$0.7 million and EBITDA increased \$0.5 million for the three months ended September 30, 2020 compared with the same period in 2019.

Intersegment Eliminations

Intersegment eliminations of revenues decreased by \$0.4 million for the three months ended September 30, 2020 compared with the same period in 2019.

Corporate Activities

Operating income was impacted by a decrease in operating expenses for corporate activities, primarily related to the recognition of earn-out provisions related to the initial sale of GPCC in the amount of \$2.0 million for the three months ended September 30, 2020.

Income Taxes

We recorded income tax expense of \$7.3 million for the three months ended September 30, 2020, compared with income tax benefit of \$12.5 million for the same period in 2019. The decrease in the amount of tax benefit recorded for the three months ended September 30, 2020 compared to the same period in 2019 was due to the recording of a valuation allowance against increases in deferred tax assets in the third quarter.

Income from Equity Method Investees

Income from equity method investees increased \$0.3 million for the three months ended September 30, 2020 compared with the same period last year due primarily to increased earnings from our GPCC joint venture during the current period.

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 is no longer consolidated in the company's consolidated financial statements and the GPCC investment is accounted for using the equity method of accounting. GPCC results for the three months ended September 30, 2019 are classified as discontinued operations. Net income from discontinued operations, net of income taxes, was \$3.4 million for the three months ended September 30, 2019.

Nine Months Ended September 30, 2020 Compared with the Nine Months Ended September 30, 2019

Consolidated Results

Consolidated revenues decreased \$256.6 million for the nine months ended September 30, 2020 compared with the same period in 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 \$39.7 million for the nine months ended September 30, 2020 compared with the same period last year primarily due to the sale of industrial-grade alcohol and ultra-high protein feed ingredients, offset by the pre-tax write-off of the goodwill in the ethanol production segment. Adjusted EBITDA increased \$80.6 million due to higher earnings from our ethanol production segment, excluding the goodwill impairment, driven by the sale of industrial-grade alcohol and high protein animal feed products as well as equity earnings from the GPCC joint venture. Interest expense decreased \$2.0 million for the nine months ended September 30, 2020 compared with the same period in 2019. Income tax benefit was \$48.5 million for the nine months ended September 30, 2020 compared with \$40.7 million for the same period in 2019. The increase in income tax benefit was primarily due to the utilization of previously recorded tax NOLs during the nine month period ended September 30, 2020 as allowed under the provisions of the recently enacted CARES Act.

The following discussion provides greater detail about our year-to-date segment performance.

Ethanol Production Segment

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

	Nine Months Ended September 30,		% Variance
	2020	2019	
Ethanol sold (thousands of gallons)	579,540	617,536	(6.2)
Distillers grains sold (thousands of equivalent dried tons)	1,504	1,601	(6.1)
Corn oil sold (thousands of pounds)	153,001	148,630	2.9
Corn consumed (thousands of bushels)	201,075	214,734	(6.4)

Revenues in our ethanol production segment decreased \$106.9 million for the nine months ended September 30, 2020 compared with the same period in 2019 primarily due to lower production volumes of ethanol and distillers grains.

Cost of goods sold for our ethanol production segment decreased \$185.9 million for the nine months ended September 30, 2020 compared with the same period last year primarily due to lower production volumes. Operating loss decreased \$46.4 million and EBITDA increased \$51.4 million for the nine months ended September 30, 2020 compared with the same period in 2019 primarily due to improved margins as well as the sale of industrial-grade alcohol and ultra-high protein. Operating income and EBITDA were also impacted by the \$24.1 million goodwill impairment charge recognized in the first quarter of 2020. Depreciation and amortization expense for the ethanol production segment was \$50.6 million for the nine months ended September 30, 2020 compared with \$46.3 million for the same period last year.

Agribusiness and Energy Services Segment

Revenues in our agribusiness and energy services segment decreased \$149.0 million while operating income decreased \$2.0 million and EBITDA decreased by \$1.6 million for the nine months ended September 30, 2020 compared with the same period in 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 quarter.

Food and Ingredients Segment

The food and ingredients segment, which now represents food-grade corn oil production had no activity during the nine months ended September 30, 2020.

Partnership Segment

Revenues generated by our partnership segment for the nine months ended September 30, 2020 were comparable with the same period for 2019. Storage and throughput services revenue increased \$0.7 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 \$0.2 million due to an increase in volumes transported for Green Plains Trade. Terminal services revenue decreased \$0.9 million primarily as a result of a decrease in fees associated with minimum volume commitments. Revenues generated from railcar transportation services decreased \$0.1 million primarily due to lower sublease revenue, partially offset by an increase in revenue due to an increase in the average capacity fee charged. Operating income and EBITDA decreased \$0.4 million for the nine months ended September 30, 2020 compared with the same period in 2019.

Intersegment Eliminations

Intersegment eliminations of revenues decreased by \$0.8 million for the nine months ended September 30, 2020 compared with the same period in 2019.

Corporate Activities

Operating income was impacted by a decrease in operating expenses for corporate activities of \$0.7 million for the nine months ended September 30, 2020 compared with the same period in 2019 due primarily to the \$2.0 million gain on the initial sale of GPCC related to the earn-out provision recognized in 2020, offset by slightly increased selling, general and administrative expenses primarily as a result of personnel costs.

Income Taxes

We recorded income tax benefit of \$48.5 million for the nine months ended September 30, 2020, compared with \$40.7 million for the same period in 2019. The increase in the amount of tax benefit recorded for the nine months ended September 30, 2020 compared to the same period in 2019 was due to the increased tax benefit in 2020 associated with the carry back of the tax NOL generated in 2019 to the 2014 tax year under the newly enacted CARES Act, offset by the release of a previously recorded valuation allowance against the 2019 NOL and other deferred tax assets.

Income from Equity Method Investees

Income from equity method investees increased \$20.4 million for the nine months ended September 30, 2020 compared with the same period last year due to earnings from our GPCC joint venture during the current period.

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 is no longer consolidated in the company's consolidated financial statements and the GPCC investment is accounted for using the equity method of accounting. GPCC results for the nine months ended September 30, 2019 are classified as discontinued operations. Net income from discontinued operations, net of income taxes, was \$1.0 million for the nine months ended September 30, 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 consistent cash flow from operating activities provide a solid foundation to meet our future liquidity and capital resource requirements.

On September 30, 2020, we had \$150.4 million in cash and equivalents, excluding restricted cash, consisting of \$70.5 million held at our parent company and the remainder held at our subsidiaries. Additionally, we had \$31.9 million in restricted cash at September 30, 2020. We also had \$349.8 million available under our committed revolving credit and term loan agreements, including \$4.3 million available under the partnership's revolving credit facility, some of which were subject to restrictions or other lending conditions. Funds at certain subsidiaries are generally required for their ongoing operational needs and restricted from distribution. At September 30, 2020, our subsidiaries had approximately \$67.5 million of net assets that were not available to us in the form of dividends, loans or advances due to restrictions contained in their credit facilities.

Additionally, with the sale of our remaining ownership in GPCC in October 2020 for \$80.5 million, the remaining availability on our \$75.0 million delayed draw loan and \$56.0 million in expected tax refund proceeds, we will have sufficient liquidity at our disposal to support our long-term objective of building a technology focused bio-refining platform, producing sustainable, high-value, ultra-high protein feed ingredients.

Net cash provided by operating activities for continuing operations was \$76.4 million for the nine months ended September 30, 2020 compared with net cash used in operating activities for continuing operations of \$17.8 million for the same period in 2019. Operating activities compared to the prior year were primarily affected by a decrease in the operating loss, goodwill impairment and changes in working capital when compared to the same period of the prior year. Net cash used in investing activities for continuing operations was \$89.5 million for the nine months ended September 30, 2020 compared with net cash provided by investing activities for continuing operations of \$37.2 million for the same period in 2019. Investing activities compared to the prior year were primarily affected by an increase in capital expenditures during 2020

compared to proceeds from the partial sale of GPCC during the nine months ended September 30, 2019. Net cash used in financing activities for continuing operations was \$74.6 million for the nine months ended September 30, 2020 compared with \$46.4 million for the same period in 2019, primarily due to changes in borrowing activity, a decrease in share repurchases and a decrease in cash dividends and distributions during 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 \$87.3 million during the nine months ended September 30, 2020, primarily for Project 24 operating expense reduction and high-protein expansion projects at various ethanol plants, and for various maintenance projects. Capital spending for the remainder of 2020 is expected to be between \$30.0 million and \$35.0 million for various projects, including the high-protein expansion at Wood River, which are expected to be financed with cash provided by operating activities, as well as borrowings under our recently secured project based financing of \$75.0 million.

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. 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.

For each calendar quarter commencing with the quarter ended September 30, 2015, the partnership agreement requires the partnership to distribute all available cash, as defined, to its partners, including us, within 45 days after the end of each calendar quarter. 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, including those for future capital expenditures, future acquisitions and anticipated future debt service requirements, plus all or any portion of the cash on hand resulting from working capital borrowings made subsequent to the end of that quarter. On October 15, 2020, the board of directors of the general partner of the partnership declared a cash distribution of \$0.12 per unit on outstanding common and subordinated units. The distribution is payable on November 13, 2020, to unitholders of record at the close of business on November 6, 2020.

Our board of directors authorized a share repurchase program of up to \$200 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. We did not repurchase any shares during the third quarter of 2020. To date, we have repurchased 7,396,936 of common stock for approximately \$92.8 million under the program.

We believe we have sufficient working capital for our existing operations. 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

For additional information related to our debt, see *Note 9 – Debt* included as part of the notes to consolidated financial statements and *Note 12 – Debt* included as part of the notes to consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2019.

We were in compliance with our debt covenants at September 30, 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 9 - 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 September 30, 2020, the outstanding principal balance was \$87.7 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 September 30, 2020, the outstanding principal balance was \$154.6 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 September 30, 2020, the outstanding principal balance was \$79.5 million on the facility and the interest rate was 2.40%.

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 up to \$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 September 30, 2020, the outstanding principal balance was \$40.0 million on the facility and the interest rate was 4.22%.

Green Plains Grain has entered into short-term inventory financing agreements with a financial institution. At September 30, 2020, 1.3 million bushels of corn had been designated as collateral under these agreements at initial values totaling \$5.6 million. 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. At September 30, 2020, the short-term notes payable were valued at \$5.9 million and our interest rate was 2.99%.

Green Plains Commodity Management has an uncommitted \$30.0 million revolving credit facility which matures April 30, 2023 to finance margins related to its hedging programs. Advances are subject to variable interest rates equal to LIBOR plus 1.75%. At September 30, 2020, the outstanding principal balance was \$21.2 million on the facility 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 September 30, 2020, the outstanding principal balance was \$10.0 million on the loan and the interest rate was 6.52%.

We also have 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 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 total amount available 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, maturing on December 31, 2021. Payments of \$12.5 million were made on the term loan principal during the three and nine months ended September 30, 2020. 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 September 30, 2020, the term loan had a balance of \$117.5 million and an interest rate of 6.00%, and there was a swing line loan outstanding of \$0.7 million at an interest rate of 7.25%.

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.

Contractual Obligations

Contractual obligations as of September 30, 2020 were as follows (in thousands):

Contractual Obligations	Payments Due By Period				
	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
Long-term and short-term debt obligations ⁽¹⁾	\$ 575,826	\$ 180,992	\$ 257,811	\$ 118,623	\$ 18,400
Interest and fees on debt obligations ⁽²⁾	51,411	23,502	17,551	4,433	5,925
Operating lease obligations ⁽³⁾	71,859	16,822	24,426	13,880	16,731
Other	22,404	4,311	4,246	5,469	8,378
Purchase obligations:					
Forward grain purchase contracts ⁽⁴⁾	99,945	97,571	2,232	142	-
Other commodity purchase contracts ⁽⁵⁾	87,918	70,440	17,449	29	-
Other	348	204	144	-	-
Total contractual obligations	\$ 909,711	\$ 393,842	\$ 323,859	\$ 142,576	\$ 49,434

(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 and office space and exclude leases not yet commenced with undiscounted future lease payments of approximately \$25.7 million.

(4) Purchase contracts represent index-priced and fixed-price contracts. Index purchase contracts are valued at current quarter-end prices.

(5) Includes fixed-price ethanol, dried distillers grains and natural gas purchase contracts.

Critical Accounting Policies and Estimates

Key accounting policies, including those relating to revenue recognition, impairment of long-lived assets and goodwill, derivative financial instruments, and accounting for income taxes, are impacted significantly by judgments, assumptions and estimates used in the preparation of the consolidated financial statements. Information about our critical accounting policies and estimates are included in our annual report on Form 10-K for the year ended December 31, 2019.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Item 3. Quantitative and Qualitative 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 all of our business in U.S. dollars and are not currently exposed to 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 \$1.1 million per year. At September 30, 2020, we had \$526.0 million in debt, \$262.0 million of which had variable interest rates.

For additional information related to our debt, see *Note 9 – Debt* included as part of the notes to consolidated financial statements and *Note 12 – Debt* included as part of the notes to consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2019.

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 and 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. During the three and nine months ended September 30, 2020, revenues included net losses of \$21.1 million and net gains of \$17.5 million, respectively, and cost of goods sold included net losses of \$1.2 million and net gains of \$11.0 million, respectively, associated with derivative financial 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 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 September 30, 2020, which is 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	1,123,000	Gallons	\$ 109,250
Corn	387,000	Bushels	\$ 105,714
Distillers grains	2,900	Tons (2)	\$ 30,262
Corn oil	292,000	Pounds	\$ 5,195
Natural gas	31,200	MmBTU	\$ 6,430

(1) Estimated volumes assume 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 \$1.1 million for grain at September 30, 2020. Our market risk at that date, based on the estimated net income effect resulting from a hypothetical 10% change in price, was approximately \$80 thousand.

Item 4. 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 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 September 30, 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.

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 U.S. generally accepted accounting principles. There were no material changes in our internal control over financial reporting that occurred during the period covered by this report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings.

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

Item 1A. Risk Factors.

Investors should carefully consider the discussion of risks and the other information in our annual report on Form 10-K for the year ended December 31, 2019, in Part I, Item 1A, “Risk Factors,” and the discussion of risks and other information in Part I, Item 2, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” under “Cautionary Information Regarding Forward-Looking Statements,” of this report. Investors should also carefully consider the discussion of risks with the partnership under the heading “Risk Factors” and other information in their annual report on Form 10-K for the year ended December 31, 2019. Although we have attempted to discuss key factors, our investors need to be aware that other risks may prove to be important in the future. New risks may emerge at any time and we cannot predict such risks or estimate the extent to which they may affect our financial performance. The following risk factors supplement and/or update risk factors previously disclosed and should be considered in conjunction with the other information included in, or incorporated by reference in, this quarterly report on Form 10-Q.

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:

- the severity of the virus;
- the duration of the outbreak;
- federal, state or local governmental regulations or other actions which could include limitations on our operations;
- the effect on customer demand resulting in a decline in the demand for our products;
- impacts on our supply chain and potential limitations of supply of our feedstocks;
- interruptions of our distribution systems and delays in the delivery of our products;
- the closure or extended shutdown of one or more major cattle packing plants, leading to depressed cattle prices or the inability in extreme cases to process such cattle;
- the health of our workforce, and our ability to meet staffing needs which is vital to our operations; and
- 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.

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.

Future demand for ethanol is uncertain and changes in federal mandates, 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. 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 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.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

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

Our board of directors authorized a share repurchase program of up to \$200 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 third quarter of 2020. Since inception, the company has repurchased 7,396,936 shares of common stock for approximately \$92.8 million under the program.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.**Exhibit Index**

Exhibit No.	Description of Exhibit
2.1	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).
3.1	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)
10.1	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).
10.2	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).
10.3	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).
10.4	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)
10.5	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).
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 Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2020, formatted in Inline Extensible Business Reporting Language (iXBRL): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Income, (iv) Consolidated Statements of Cash Flows, and (v) the Notes to Consolidated Financial Statements
104	The cover page from Green Plains Inc.'s Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2020, formatted in iXBRL.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

GREEN PLAINS INC.
(Registrant)

Date: November 6, 2020

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

Date: November 6, 2020

By: /s/ G. Patrich Simpkins Jr.
G. Patrich Simpkins Jr.
Chief Financial Officer
(Principal Financial Officer)

**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 Quarterly Report on Form 10-Q 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: November 6, 2020

/s/ Todd A. Becker

Todd A. Becker
President and Chief Executive Officer
(Principal Executive Officer)

**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 Quarterly Report on Form 10-Q 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: November 6, 2020

/s/ G. Patrich Simpkins Jr.

G. Patrich Simpkins Jr.
Chief Financial Officer
(Principal Financial Officer)

**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 Quarterly Report of Green Plains Inc. (the “company”) on Form 10-Q for the fiscal quarter ended September 30, 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: November 6, 2020

/s/ Todd A. Becker

Todd A. Becker
President and Chief Executive Officer

**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 Quarterly Report of Green Plains Inc. (the “company”) on Form 10-Q for the fiscal quarter ended September 30, 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: November 6, 2020

/s/ G. Patrich Simpkins Jr.

G. Patrich Simpkins Jr.
Chief Financial Officer
