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

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2021

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

For the transition period from to
Commission File Number: 001-38221

ECOVYST INC.

Delaware	**81-3406833**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
300 Lindenwood Drive **Malvern, Pennsylvania**	**19355**
(Address of principal executive offices)	(Zip Code)

(610) 651-4400
(Registrant’s telephone number, including area code)

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

Title of each class	Trading symbol	Name of each exchange on which registered
Common stock, par value $0.01 per share	ECVT	New York Stock Exchange

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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	☒
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

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

The number of shares of common stock outstanding as of November 4, 2021 was 137,059,709.

ECOVYST INC.

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September 30, 2021

PART I—FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS (UNAUDITED)

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(in thousands, except share and per share amounts)
(unaudited)

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Sales	$ 167,428	$ 130,675	$ 441,004	$ 371,870
Cost of goods sold	113,784	89,844	318,768	258,462
Gross profit	53,644	40,831	122,236	113,408
Selling, general and administrative expenses	24,836	18,650	68,822	61,515
Other operating expense, net	6,314	3,427	16,786	11,319
Operating income	22,494	18,754	36,628	40,574
Equity in net (income) from affiliated companies	(8,758)	(134)	(20,723)	(19,897)
Interest expense, net	9,005	10,430	28,202	40,864
Debt extinguishment costs	15,185	14,004	26,902	16,517
Other (income) expense, net	(218)	(4,197)	3,081	(236)
Income (loss) from continuing operations before income taxes and noncontrolling interest	7,280	(1,349)	(834)	3,326
Provision (benefit) for income taxes	2,591	21,310	5,095	(4,985)
Net income (loss) from continuing operations	4,689	(22,659)	(5,929)	8,311
Net (loss) income from discontinued operations, net of tax	(75,872)	30,469	(159,122)	16,255
Net (loss) income	(71,183)	7,810	(165,051)	24,566
Less: Net income attributable to the noncontrolling interest - discontinued operations	76	298	333	904
Net (loss) income attributable to Ecovyst Inc.	$ (71,259)	$ 7,512	$ (165,384)	$ 23,662
Income (loss) from continuing operations attributable to Ecovyst Inc.	$ 4,689	$ (22,659)	$ (5,929)	$ 8,311
(Loss) income from discontinued operations attributable to Ecovyst Inc.	(75,948)	30,171	(159,455)	15,351
Net (loss) income attributable to Ecovyst Inc.	$ (71,259)	$ 7,512	$ (165,384)	$ 23,662
Net income (loss) per share:				
Basic (loss) income per share - continuing operations	$ 0.03	$ (0.17)	$ (0.04)	$ 0.06
Diluted (loss) income per share - continuing operations	$ 0.03	$ (0.17)	$ (0.04)	$ 0.06
Basic income (loss) per share - discontinued operations	$ (0.56)	$ 0.22	$ (1.17)	$ 0.11
Diluted income (loss) per share - discontinued operations	$ (0.55)	$ 0.22	$ (1.17)	$ 0.11
Basic (loss) income per share	$ (0.52)	$ 0.06	$ (1.22)	$ 0.17
Diluted (loss) income per share	$ (0.52)	$ 0.06	$ (1.22)	$ 0.17
Weighted average shares outstanding:				
Basic	136,129,591	135,106,969	136,111,555	135,292,163
Diluted	137,354,427	135,106,969	136,111,555	136,188,033

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)
(unaudited)

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Net (loss) income	$ (71,183)	$ 7,810	$ (165,051)	$ 24,566
Other comprehensive income (loss), net of tax:				
Pension and postretirement benefits	1,090	(20)	1,005	(48)
Net gain from hedging activities	460	945	1,638	911
Foreign currency translation	2,952	13,572	11,254	(20,844)
Total other comprehensive income (loss)	4,502	14,497	13,897	(19,981)
Comprehensive (loss) income	(66,681)	22,307	(151,154)	4,585
Less: Comprehensive (loss) income attributable to noncontrolling interests	(203)	607	113	(1,899)
Comprehensive (loss) income attributable to Ecovyst Inc.	$ (66,478)	$ 21,700	$ (151,267)	$ 6,484

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share amounts)
(unaudited)

	September 30, 2021	December 31, 2020
ASSETS		
Cash and cash equivalents	$ 104,752	$ 113,377
Accounts receivable, net	81,131	45,943
Inventories, net	48,068	52,789
Prepaid and other current assets	17,514	11,468
Current assets held for sale	—	205,090
Total current assets	251,465	428,667
Investments in affiliated companies	455,265	458,128
Property, plant and equipment, net	595,088	591,710
Goodwill	406,128	391,565
Other intangible assets, net	149,148	137,446
Right-of-use lease assets	30,972	28,943
Other long-term assets	14,765	12,446
Long-term assets held for sale	—	1,149,443
Total assets	$ 1,902,831	$ 3,198,348
LIABILITIES		
Current maturities of long-term debt	$ 9,000	$ —
Accounts payable	49,235	38,131
Operating lease liabilities—current	8,082	6,715
Accrued liabilities	71,681	48,482
Current liabilities held for sale	—	108,537
Total current liabilities	137,998	201,865
Long-term debt, excluding current portion	874,591	1,400,369
Deferred income taxes	130,558	126,210
Operating lease liabilities—noncurrent	22,777	21,972
Other long-term liabilities	29,591	15,399
Long-term liabilities held for sale	—	155,354
Total liabilities	1,195,515	1,921,169
Commitments and contingencies (Note 17)		
EQUITY		
Common stock ($0.01 par); authorized shares 450,000,000; issued shares 137,835,243 and 137,102,143 on September 30, 2021 and December 31, 2020, respectively; outstanding shares 136,953,030 and 136,318,557 on September 30, 2021 and December 31, 2020, respectively	1,378	1,371
Preferred stock ($0.01 par); authorized shares 50,000,000; no shares issued or outstanding on September 30, 2021 and December 31, 2020	—	—
Additional paid-in capital	1,068,815	1,477,859
Accumulated deficit	(341,142)	(175,758)
Treasury stock, at cost; shares 882,213 and 783,586 on September 30, 2021 and December 31, 2020, respectively	(12,551)	(11,081)
Accumulated other comprehensive loss	(9,184)	(15,265)
Total Ecovyst Inc. equity	707,316	1,277,126
Noncontrolling interest	—	53
Total equity	707,316	1,277,179
Total liabilities and equity	$ 1,902,831	$ 3,198,348

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)
(unaudited)

	Common stock	Additional paid-in capital	(Accumulated deficit)	Treasury stock, at cost	Accumulated other comprehensive income (loss)	Non-controlling interest	Total
Balance, December 31, 2020	$ 1,371	$ 1,477,859	$ (175,758)	$ (11,081)	$ (15,265)	$ 53	$ 1,277,179
Net (loss) income	—	—	(92,635)	—	—	117	(92,518)
Other comprehensive loss	—	—	—	—	(2,745)	(394)	(3,139)
Tax withholdings on equity award vesting	—	—	—	(1,470)	—	—	(1,470)
Distributions to noncontrolling interests	—	—	—	—	—	(516)	(516)
Stock compensation expense	—	6,877	—	—	—	—	6,877
Shares issued under equity incentive plan, net of forfeitures	7	63	—	—	—	—	70
Balance, March 31, 2021	$ 1,378	$ 1,484,799	$ (268,393)	$ (12,551)	$ (18,010)	$ (740)	$ 1,186,483
Net income	—	—	(1,490)	—	—	140	(1,350)
Other comprehensive income	—	—	—	—	12,081	453	12,534
Distributions to noncontrolling interests	—	—	—	—	—	(593)	(593)
Stock compensation expense	—	7,499	—	—	—	—	7,499
Shares issued under equity incentive plan, net of forfeitures	—	36	—	—	—	—	36
Balance, June 30, 2021	$ 1,378	$ 1,492,334	$ (269,883)	$ (12,551)	$ (5,929)	$ (740)	$ 1,204,609
Net income	—	—	(71,259)	—	—	76	(71,183)
Other comprehensive income (loss)	—	—	—	—	4,781	(279)	4,502
Dividends paid on common stock ($3.20 per share)	—	(435,593)	—	—	—	—	(435,593)
Disposal of business	—	—	—	—	(8,036)	943	(7,093)
Stock compensation expense	—	11,961	—	—	—	—	11,961
Shares issued under equity incentive plan, net of forfeitures	—	113	—	—	—	—	113
Balance, September 30, 2021	$ 1,378	$ 1,068,815	$ (341,142)	$ (12,551)	$ (9,184)	$ —	$ 707,316

	Common stock	Additional paid-in capital	Retained earnings	Treasury stock, at cost	Accumulated other comprehensive income (loss)	Non-controlling interest	Total
Balance, December 31, 2019	$ 1,369	$ 1,696,899	$ 103,013	$ (6,483)	$ (15,348)	$ 5,868	$ 1,785,318
Net income	—	—	224	—	—	285	509
Other comprehensive loss	—	—	—	—	(43,411)	(3,488)	(46,899)
Repurchases of common shares	—	—	—	(2,059)	—	—	(2,059)
Tax withholdings on equity award vesting	—	—	—	(1,830)	—	—	(1,830)
Stock compensation expense	—	5,920	—	—	—	—	5,920
Shares issued under equity incentive plan, net of forfeitures	4	177	—	—	—	—	181
Balance, March 31, 2020	$ 1,373	$ 1,702,996	$ 103,237	$ (10,372)	$ (58,759)	$ 2,665	$ 1,741,140
Net income	—	—	15,926	—	—	321	16,247
Other comprehensive income	—	—	—	—	12,045	376	12,421
Stock compensation expense	—	6,366	—	—	—	—	6,366
Shares issued under equity incentive plan, net of forfeitures	(5)	5	—	—	—	—	—
Balance, June 30, 2020	$ 1,368	$ 1,709,367	$ 119,163	$ (10,372)	$ (46,714)	$ 3,362	$ 1,776,174
Net income	—	—	7,512	—	—	298	7,810
Other comprehensive income	—	—	—	—	14,188	309	14,497
Tax withholdings on equity award vesting	—	—	—	(162)	—	—	(162)
Distributions to noncontrolling interests	—	—	—	—	—	(270)	(270)
Stock compensation expense	—	6,137	—	—	—	—	6,137
Balance, September 30, 2020	$ 1,368	$ 1,715,504	$ 126,675	$ (10,534)	$ (32,526)	$ 3,699	$ 1,804,186

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Nine months ended September 30, 2021	Nine months ended September 30, 2020
Cash flows from operating activities:		
Net (loss) income	$ (165,051)	$ 24,566
Net loss (income) from discontinued operations	159,122	(16,255)
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	49,902	47,857
Amortization	10,182	8,686
Amortization of deferred financing costs and original issue discount	1,409	1,861
Debt extinguishment costs	12,818	14,146
Foreign currency exchange loss (gain)	4,803	(577)
Pension and postretirement healthcare (benefit) expense	(1,786)	341
Pension and postretirement healthcare funding	—	(3,282)
Deferred income tax provision	4,256	2,731
Net loss on asset disposals	4,535	1,245
Stock compensation	22,837	13,324
Equity in net income from affiliated companies	(20,723)	(19,897)
Dividends received from affiliated companies	20,000	15,000
Other, net	8,490	350
Working capital changes that provided (used) cash, excluding the effect of acquisitions and dispositions:		
Receivables	(33,830)	1,691
Inventories	6,120	(4,916)
Prepaids and other current assets	(8,405)	(1,679)
Accounts payable	10,096	412
Accrued liabilities	7,511	(29,191)
Net cash provided by operating activities, continuing operations	92,286	56,413
Net cash (used in) provided by operating activities, discontinued operations	(7,420)	94,193
Net cash provided by operating activities	84,866	150,606
Cash flows from investing activities:		
Purchases of property, plant and equipment	(44,648)	(34,568)
Proceeds from business divestiture, net of cash	980,350	—
Business combinations, net of cash acquired	(42,782)	—
Proceeds from sale of assets	—	2,375
Other, net	(8)	(4)
Net cash provided by (used in) investing activities, continuing operations	892,912	(32,197)
Net cash used in investing activities, discontinued operations	(40,943)	(9,854)
Net cash provided by (used in) investing activities	851,969	(42,051)

	Nine months ended September 30,	
	2021	2020
Cash flows from financing activities:		
Draw down of revolving credit facilities	—	127,500
Repayments of revolving credit facilities	—	(127,500)
Issuance of long-term debt, net of discount	897,750	640,340
Debt issuance costs	(1,293)	(8,987)
Repayments of long-term debt	(1,428,613)	(626,625)
Debt prepayment fees	(8,481)	(10,550)
Proceeds from failed sale-leaseback	14,104	—
Dividends paid to stockholders	(435,593)	—
Repurchases of common shares	(1,470)	(4,051)
Proceeds from stock options exercised	223	181
Other, net	(104)	—
Net cash used in financing activities, continuing operations	(963,477)	(9,692)
Net cash used in provided by financing activities, discontinued operations	(1,144)	(534)
Net cash used in financing activities	(964,621)	(10,226)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4,681)	(5,955)
Net change in cash, cash equivalents and restricted cash	(32,467)	92,374
Cash, cash equivalents and restricted cash at beginning of period	137,219	73,917
Cash, cash equivalents and restricted cash at end of period	$ 104,752	$ 166,291
Less: cash, cash equivalents, and restricted cash of discontinued operations	—	(41,804)
Cash, cash equivalents and restricted cash at end of period of continuing operations	$ 104,752	$ 124,487

For supplemental cash flow disclosures, see Note 21.

See accompanying notes to condensed consolidated financial statements.

ECOVYST INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in thousands, except share and per share amounts)
(unaudited)

1. Background and Basis of Presentation:

Description of Business

Ecovyst Inc. and subsidiaries (the "Company" or "Ecovyst"), formerly known as PQ Group Holdings Inc. and subsidiaries ("PQ Group Holdings"), is a leading integrated and innovative global provider of specialty catalysts and services. The Company supports customers globally through its strategically located network of manufacturing facilities. The Company believes that its products, which are predominantly inorganic, and services contribute to improving the sustainability of the environment.

On December 14, 2020, PQ Group Holdings completed the sale of its Performance Materials business for $650,000, and the results of operations of this business have been presented as discontinued operations in the condensed consolidated financial statements for all periods presented. See Note 3 for more information on the transaction.

Effective on August 1, 2021, PQ Group Holdings completed the sale of its Performance Chemicals business for $1,100,000, subject to certain purchase price adjustments as set forth in the agreement. Upon entering into the definitive agreement, the transaction met the held for sale criteria and consequently the financial results of the Performance Chemicals business are reported in discontinued operations in the condensed consolidated financial statements for all periods presented. See Note 3 for more information on the transaction.

In connection with the closing of the sale of the Performance Chemicals business, PQ Group Holdings Inc. changed its name from "PQ Group Holdings Inc." to "Ecovyst Inc.", changed the ticker symbol of its common stock listed on the New York Stock Exchange from "PQG" to "ECVT" and rebranded its segments from "Refining Services" to "Ecoservices" and "Catalysts" to "Catalyst Technologies".

The Company has two uniquely positioned specialty businesses: Ecoservices provides sulfuric acid recycling to the North American refining industry for the production of alkylate and provides on-purpose virgin sulfuric acid for water treatment, mining and industrial applications; and Catalyst Technologies provides finished silica catalysts and catalyst supports necessary to produce high strength and high stiffness plastics and, through its Zeolyst joint venture, supplies zeolites used for catalysts that remove nitric oxide from diesel engine emissions as well as sulfur from fuels during the refining process.

The Company's regeneration services product group, which is a part of the Company's Ecoservices segment, typically experiences seasonal fluctuations as a result of higher demand for gasoline products in the summer months and lower demand in the winter months. These demand fluctuations result in higher sales and working capital requirements in the second and third quarters.

The notes to the condensed consolidated financial statements, unless otherwise indicated, are on a continuing operations basis.

Basis of Presentation

The condensed consolidated financial statements included herein are unaudited. Certain information and footnote disclosures normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States ("GAAP") have been condensed or omitted pursuant to such rules and regulations for interim reporting. In the opinion of management, all adjustments of a normal and recurring nature necessary to state fairly the financial position and results of operations have been included. The results of operations are not necessarily indicative of the expected results for the full year. The accompanying unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and related notes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2020.

2. New Accounting Standards:

Recently Adopted Accounting Standards

In December 2019, the Financial Accounting Standards Board ("FASB") issued new guidance to reduce the complexity in accounting for income taxes by removing certain exceptions to the general principles and simplifying areas such as franchise taxes, step-up in tax basis goodwill, separate entity financial statements and interim recognition of enactment of tax laws or rate changes. The new guidance is effective for fiscal years beginning after December 15, 2020 and interim periods within those fiscal years. The Company adopted the new guidance effective January 1, 2021, with no material impact to the Company's condensed consolidated financial position, results of operations or cash flows.

(Dollars in thousands, except share and per share amounts)

Accounting Standards Not Yet Adopted

In March 2020, the FASB issued guidance to address certain accounting consequences from the anticipated transition from the use of the London Interbank Offered Rate ("LIBOR") and other interbank offered rates to alternative reference rates. The new guidance contains practical expedients for reference rate reform related activities that impact debt, leases, derivatives and other contracts. The guidance is optional and may be elected over time as reference rate reform activities occur. The Company elected to apply the hedge accounting expedients related to probability and the assessments of effectiveness for future LIBOR-indexed cash flows to assume that the index upon which future hedged transactions will be based matches the index of the corresponding derivatives. Application of these expedients preserves the presentation of derivatives consistent with past presentation. The Company continues to evaluate the impact of the guidance and may apply other elections as applicable as additional changes in the market occur.

3. Divestitures:

Performance Materials Divestiture

On December 14, 2020, the Company completed the sale of its Performance Materials business for $650,000. In the fourth quarter of 2020, the Performance Materials business met the criteria set forth in Accounting Standards Codification 205-20, Presentation of Financial Statements - Discontinued Operations ("ASC 205-20"), as the sale represented a strategic shift that had a major effect on the Company's operations and financial results. As a result, the Company's condensed consolidated financial statements for the three and nine months ended September 30, 2020 reflect the Performance Materials business as a discontinued operation. The divested business historically represented a reportable segment of the Company, including certain Australian operations that were historically reported in the Performance Chemicals reportable segment.

The following table summarizes the results of discontinued operations related to the Performance Materials divestiture:

	Three months ended September 30, 2020	Nine months ended September 30, 2020
Sales	$ 106,777	$ 280,663
Cost of goods sold	80,449	208,854
Selling, general and administrative expenses	8,710	26,337
Other operating expense, net	3,879	16,585
Operating income	13,739	28,887
Interest expense, net[1]	3,894	12,810
Other income, net	(1,126)	(961)
Income from discontinued operations before income tax	10,971	17,038
(Benefit) provision for income taxes	(420)	3,085
Income from discontinued operations, net of tax	$ 11,391	$ 13,953

(1) The closing of the transaction triggered the Company's obligation to provide partial repayment under its Amended and Restated Term Loan Credit Agreement, dated May 4, 2016 and its New Term Loan Credit Agreement, dated as of July 22, 2020. As such, interest expense has been allocated to discontinued operations on the basis of the Company's mandatory repayment of $275,787 of the Senior Secured Term Loan Facility due February 2027 and its mandatory repayment of $188,722 of the new Senior Secured Term Loan Facility due February 2027.

During the three months ended September 30, 2021, the Company incurred transaction costs of $264 and stock-based compensation expense of $1,194, and an associated tax benefit of $339 related to the Performance Materials divestiture which is included in loss from discontinued operations, net of tax. During the nine months ended September 30, 2021, the Company incurred transaction costs of $1,794 and stock-based compensation expense of $2,477, and an associated tax benefit of $1,045 related to the Performance Materials divestiture which is included in loss from discontinued operations, net of tax.

Net income attributable to the noncontrolling interest related to the Performance Materials business, net of tax was $97 and $219 for the three and nine months ended September 30, 2020, respectively. Net income attributable to Ecovyst Inc., related to the Performance Materials business, net of tax was $11,294 and $13,734 for the three and nine months ended September 30, 2020, respectively.

ECOVYST INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in thousands, except share and per share amounts)
(unaudited)

Upon the close of the transaction, the Company entered into a Transition Services Agreement with the buyer pursuant to which the buyer is receiving certain services to provide for the orderly transition of various functions and processes after the closing of the transaction. The services under the Transition Services Agreement include information technology, accounting, tax, financial services, human resources, facilities, and other administrative support services. These services were provided for a period of nine months, with three 30-day extensions available. The Company billed $253 and $3,314 under the Transition Services Agreement to the buyer during the three and nine months ended September 30, 2021, respectively. Those billings are included in selling, general and administrative expenses on the condensed consolidated financial statements for the three and nine months ended September 30, 2021.

Performance Chemicals Divestiture

On February 28, 2021, the Company entered into a definitive agreement to sell its Performance Chemicals business to Sparta Aggregator L.P. (the "Buyer"), a partnership established by Koch Minerals & Trading, LLC and Cerberus Capital Management, L.P., for $1,100,000, subject to certain adjustments including indebtedness, cash, working capital and transaction expenses. The Company completed the sale of the Performance Chemicals business on August 1, 2021.

In the first quarter of 2021, the Performance Chemicals business met the discontinued operations criteria set forth in ASC 205-20, as the sale represents a strategic shift that will have a major effect on the Company's operations and financial results. As a result, the Company's condensed consolidated financial statements for all periods presented reflect the Performance Chemicals business as a discontinued operation. The Performance Chemicals business historically represented a reportable segment of the Company.

Prior to the closing of the transaction, the disposal group was tested for recoverability as of each of the balance sheet dates since meeting the discontinued operations criteria, and the Company recognized an estimated disposal loss of $13,990 and $109,584 during the three and six months ended June 30, 2021, respectively, which was included in net loss from discontinued operations, net of tax on the condensed consolidated statements of income for the respective periods.

The final loss on the sale of the Performance Chemicals business was $157,539, which is included in net (loss) income from discontinued operations, net of tax in the Company's condensed consolidated statements of income for the nine months ended September 30, 2021. The following is a reconciliation of the loss recorded on the sale:

Net proceeds received from the sale of the Performance Chemicals business	$	980,350
Transaction costs		(35,402)
Net assets derecognized		(1,102,487)
Loss on sale of the Performance Chemicals business	$	(157,539)

In connection with the sale of the Performance Chemicals business and the related loss, as noted above, the Company has recognized a tax benefit of $3,052 within net loss from discontinued operations, net of tax on the condensed consolidated statement of income.

ECOVYST INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in thousands, except share and per share amounts)
(unaudited)

The following table summarizes the results of discontinued operations related to the Performance Chemicals business for the periods presented:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Sales	$ 54,973	$ 145,244	$ 389,870	$ 456,462
Cost of goods sold	39,582	115,902	284,220	363,740
Selling, general and administrative expenses	6,552	9,709	29,758	31,440
Other operating (income) expense, net[1]	(18,993)	5,075	10,337	19,154
Goodwill impairment charge	—	—	75,080	—
Loss on sale of the Performance Chemicals business	123,035	—	157,539	—
Operating income (loss)	(95,203)	14,558	(167,064)	42,128
Equity in net (income) from affiliated companies	(25)	(49)	(111)	(128)
Interest expense, net[2]	1,916	4,318	10,730	11,698
Other expense (income), net	153	334	(6,210)	(3,100)
(Loss) income from discontinued operations before income tax	(97,247)	9,955	(171,473)	33,658
(Benefit) provision for income taxes	(22,494)	(9,125)	(15,576)	31,354
(Loss) income from discontinued operations, net of tax	$ (74,753)	$ 19,080	$ (155,897)	$ 2,304

(1) The Company reclassified transaction costs that were previously recorded to this line item and included those charges in the line item Loss on sale of the Performance Chemicals business during the three months ended September 30, 2021 .

(2) Upon the close of the transaction, the Company used a portion of the net proceeds to repay a portion of its outstanding debt amounting to $526,363. Refer to Note 13 for additional details on the repayment of outstanding debt. Prior to the Company's debt refinancing in June 2021, the Company's outstanding term loan facilities had mandatory repayment provisions. As a result, interest expense has been allocated to discontinued operations on the basis of the Company's total repayment of $526,363.

Net income attributable to the noncontrolling interest related to the Performance Chemicals business, net of tax was $76 and $200 for the three months ended September 30, 2021 and 2020, respectively. Net income (loss) income attributable to Ecovyst Inc., related to the Performance Chemicals business, net of tax was $(74,829) and $18,880 for the three months ended September 30, 2021 and 2020, respectively.

Net income attributable to the noncontrolling interest related to the Performance Chemicals business, net of tax was $333 and $685 for the nine months ended September 30, 2021 and 2020, respectively. Net (loss) income attributable to Ecovyst Inc., related to the Performance Chemicals business, net of tax was $(156,230) and $1,619 for the nine months ended September 30, 2021 and 2020, respectively.

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The following table summarizes the assets and liabilities of discontinued operations related to the divestiture of the Performance Chemicals business as of December 31, 2020.

		December 31, 2020
ASSETS		
Cash and cash equivalents	$	22,153
Accounts receivables, net		87,202
Inventories, net		74,647
Prepaid and other current assets		21,088
Current assets held for sale	$	205,090
Investments in affiliated companies	$	324
Property, plant and equipment, net		391,524
Goodwill		326,173
Other intangible assets, net		388,857
Right-of-use lease assets		19,296
Other long-term assets		23,269
Long-term assets held for sale	$	1,149,443
LIABILITIES		
Accounts payable	$	74,728
Operating lease liabilities—current		8,479
Accrued liabilities		25,330
Current liabilities held for sale	$	108,537
Deferred income taxes	$	49,690
Operating lease liabilities—noncurrent		10,047
Other long-term liabilities		95,617
Long-term liabilities held for sale	$	155,354

In connection with the divestiture of the Performance Chemicals business, the Company entered into a contract manufacturing agreement effective on August 2, 2021 with PQ Silicas UK Ltd., a subsidiary of the Buyer, related to a facility in Warrington, United Kingdom. Pursuant to this agreement, the Buyer will manufacture and sell silica catalyst finished good products to the Company, which are finished good products sold within the Company's Catalyst Technologies segment. Additionally, certain machinery, equipment, and other tangible personal property assets identified in the Agreement ("Catalyst Production Assets") owned by the Buyer will be used exclusively in the manufacture of silica catalyst products for the Company. The Company does not meet the requirements for a sale-leaseback transaction as described in Accounting Standards Codification 842-40, Leases - Sale-Leaseback Transactions. Under the failed-sale-leaseback accounting model, the Company is deemed under GAAP to still own the Catalyst Production Assets, which the Company must continue to reflect in its consolidated balance sheet and depreciate over the assets' remaining useful lives. Based on the estimated fair market values of the Catalyst Production Assets, the failed-sale-leaseback accounting treatment resulted in a loss of $14,104 due to the requirement to treat a certain amount of the pre-tax cash proceeds from the divestiture as though it were the result of a financing obligation. The agreement has an initial term of five years, with an option to renew, as well as an "Option Bill of Sale" which provides for the transfer from the Buyer to the Company of the Catalyst Production Assets upon the Company's exercise of a one-dollar purchase option. Payments made to the Buyer under the contact manufacturing agreement were $1,351 for the three and nine months ended September 30, 2021.

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In addition to the contract manufacturing agreement noted above, the Company also entered into certain supply agreements with the Buyer, as well as a Transition Services Agreement, pursuant to which the Buyer is receiving and performing certain services to provide for the orderly transition of various functions and processes after the closing of the transaction. The services under the Transition Services Agreement include information technology, accounting, tax, financial services, human resources, facilities, and other administrative support services. These services are provided for a period of six months. Billings under the Transition Services Agreement to the Buyer during the three and nine months ended September 30, 2021 were immaterial. Those billings are included in selling, general and administrative expenses on the condensed consolidated financial statements for the three and nine months ended September 30, 2021.

4. Revenue from Contracts with Customers:

Disaggregated Revenue

The Company's primary means of disaggregating revenues is by reportable segments, which can be found in Note 18 to these condensed consolidated financial statements.

The Company's portfolio of products is integrated into a variety of end uses, which are described in the table below.

Key End Uses	Key Products
Industrial & process chemicals	• Sulfur derivatives for industrial production
	• Treatment services
Fuels & emission control	• Refining catalysts
	• Emission control catalysts
	• Catalyst recycling services
Packaging & engineered plastics	• Catalysts for high-density polyethylene and chemicals syntheses
	• Antiblock for film packaging
	• Sulfur derivatives for nylon production
Natural resources	• Sulfur derivatives for mining

The following tables disaggregate the Company's sales, by segment and end use, for the three and nine months ended September 30, 2021 and 2020:

	Three months ended September 30, 2021		
	Ecoservices	Catalyst Technologies	Total
Industrial & process chemicals	$ 23,297	$ 5	$ 23,302
Fuels & emission control[1]	67,644	—	67,644
Packaging & engineered plastics	23,315	29,873	53,188
Natural resources	23,294	—	23,294
Total segment sales	$ 137,550	$ 29,878	$ 167,428

	Three months ended September 30, 2020		
	Ecoservices	Catalyst Technologies	Total
Industrial & process chemicals	$ 17,447	$ 51	$ 17,498
Fuels & emission control[1]	60,022	—	60,022
Packaging & engineered plastics	10,941	23,020	33,961
Natural resources	19,194	—	19,194
Total segment sales	$ 107,604	$ 23,071	$ 130,675

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	Nine months ended September 30, 2021		
	Ecoservices	Catalyst Technologies	Total
Industrial & process chemicals	$ 58,581	$ 5	$ 58,586
Fuels & emission control[1]	191,630	—	191,630
Packaging & engineered plastics	48,916	82,490	131,406
Natural resources	59,382	—	59,382
Total segment sales	$ 358,509	$ 82,495	$ 441,004

	Nine months ended September 30, 2020		
	Ecoservices	Catalyst Technologies	Total
Industrial & process chemicals	$ 53,518	$ 100	$ 53,618
Fuels & emission control[1]	166,416	—	166,416
Packaging & engineered plastics	29,147	73,043	102,190
Natural resources	49,646	—	49,646
Total segment sales	$ 298,727	$ 73,143	$ 371,870

(1) As described in Note 1, the Company experiences seasonal sales fluctuations to customers in the fuels & emission control end use.

Contract Assets and Liabilities

A contract asset is a right to consideration in exchange for goods that the Company has transferred to a customer when that right is conditional on something other than the passage of time. A contract liability exists when the Company receives consideration in advance of performance obligations being satisfied. The Company has no contract assets or liabilities on its condensed consolidated balance sheets as of September 30, 2021 and December 31, 2020. For the three and nine months ended September 30, 2021 and 2020, revenue recognized from performance obligations related to prior periods was not material.

5. Fair Value Measurements:

Fair values are based on quoted market prices when available. When market prices are not available, fair values are generally estimated using discounted cash flow analyses, incorporating current market inputs for similar financial instruments with comparable terms and credit quality. In instances where there is little or no market activity for the same or similar instruments, the Company estimates fair values using methods, models and assumptions that management believes a hypothetical market participant would use to determine a current transaction price. These valuation techniques involve some level of management estimation and judgment that becomes significant with increasingly complex instruments or pricing models. Where appropriate, adjustments are included to reflect the risk inherent in a particular methodology, model or input used.

The Company’s financial assets and liabilities carried at fair value have been classified based upon a fair value hierarchy. The hierarchy gives the highest ranking to fair values determined using unadjusted quoted prices in active markets for identical assets and liabilities (Level 1) and the lowest ranking to fair values determined using methodologies and models with unobservable inputs (Level 3). The classification of an asset or a liability is based on the lowest level input that is significant to its measurement. For example, a Level 3 fair value measurement may include inputs that are both observable (Levels 1 and 2) and unobservable (Level 3). The levels of the fair value hierarchy are as follows:

- Level 1—Values are unadjusted quoted prices for identical assets and liabilities in active markets accessible at the measurement date. Active markets provide pricing data for trades occurring at least weekly and include exchanges and dealer markets.
- Level 2—Inputs include quoted prices for similar assets or liabilities in active markets, quoted prices from those willing to trade in markets that are not active, or other inputs that are observable or can be corroborated by market data for the term of the instrument. Such inputs include market interest rates and volatilities, spreads and yield curves.

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- Level 3—Certain inputs are unobservable (supported by little or no market activity) and significant to the fair value measurement. Unobservable inputs reflect the Company's best estimate of what hypothetical market participants would use to determine a transaction price for the asset or liability at the reporting date.

The following table presents information about the Company's assets and liabilities that were measured at fair value on a recurring basis as of September 30, 2021 and December 31, 2020, and indicates the fair value hierarchy of the valuation techniques the Company utilized to determine such fair value.

	September 30, 2021	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Derivative contracts (Note 14)	$ 189	$ —	$ 189	$ —
Liabilities:				
Derivative contracts (Note 14)	$ 1,937	$ —	$ 1,937	$ —

	December 31, 2020	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Liabilities:				
Derivative contracts (Note 14)	$ 3,704	$ —	$ 3,704	$ —

Derivative contracts

Derivative assets and liabilities can be exchange-traded or traded over-the-counter ("OTC"). The Company generally values exchange-traded derivatives using models that calibrate to market transactions and eliminate timing differences between the closing price of the exchange-traded derivatives and their underlying instruments. OTC derivatives are valued using market transactions and other market evidence whenever possible, including market-based inputs to models, model calibration to market transactions, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. When models are used, the selection of a particular model to value an OTC derivative depends on the contractual terms of, and specific risks inherent in, the instrument as well as the availability of pricing information in the market. The Company generally uses similar models to value similar instruments. Valuation models require a variety of inputs, including contractual terms, market prices and rates, forward curves, measures of volatility, and correlations of such inputs. For OTC derivatives that trade in liquid markets, such as forward contracts, swaps and options, model inputs can generally be corroborated by observable market data by correlation or other means, and model selection does not involve significant management judgment.

As of September 30, 2021, the Company had interest rate caps that were fair valued using Level 2 inputs. In March 2021, the Company settled its cross-currency swaps, which were used as a hedging instrument of its net investment in foreign assets in its Performance Chemicals segment. Refer to Note 14 of these condensed consolidated financial statements for additional information. In addition, the Company applies a credit valuation adjustment to reflect credit risk which is calculated based on credit default swaps. To the extent that the Company's net exposure under a specific master agreement is an asset, the Company utilizes the counterparty's default swap rate. If the net exposure under a specific master agreement is a liability, the Company utilizes a default swap rate comparable to Ecovyst. The credit valuation adjustment is added to the discounted fair value to reflect the exit price that a market participant would be willing to receive to assume the Company's liabilities or that a market participant would be willing to pay for the Company's assets.

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6. Stockholders' Equity:

Accumulated Other Comprehensive Income (Loss)

The following tables present the tax effects of each component of other comprehensive income (loss) for the three and nine months ended September 30, 2021 and 2020:

	Three months ended September 30,					
	2021			2020		
	Pre-tax amount	Tax benefit/ (expense)	After-tax amount	Pre-tax amount	Tax benefit/ (expense)	After-tax amount
Defined benefit and other postretirement plans:						
Amortization of net gains	$ 1	$ —	$ 1	$ 28	$ (9)	$ 19
Amortization of prior service cost	(58)	14	(44)	(52)	13	(39)
Settlement gain	1,507	(374)	1,133	—	—	—
Benefit plans, net	1,450	(360)	1,090	(24)	4	(20)
Net gain from hedging activities	613	(153)	460	1,260	(315)	945
Foreign currency translation[1]	(1,555)	4,507	2,952	17,596	(4,024)	13,572
Other comprehensive income	$ 508	$ 3,994	$ 4,502	$ 18,832	$ (4,335)	$ 14,497

	Nine months ended September 30,					
	2021			2020		
	Pre-tax amount	Tax benefit/ (expense)	After-tax amount	Pre-tax amount	Tax benefit/ (expense)	After-tax amount
Defined benefit and other postretirement plans:						
Amortization of net gains	$ 4	$ (1)	$ 3	$ 93	$ (25)	$ 68
Amortization of prior service cost	(174)	43	(131)	(155)	39	(116)
Settlement gain	1,507	(374)	1,133	—	—	—
Benefit plans, net	1,337	(332)	1,005	(62)	14	(48)
Net gain from hedging activities	2,184	(546)	1,638	1,215	(304)	911
Foreign currency translation[1]	4,300	6,954	11,254	(19,308)	(1,536)	(20,844)
Other comprehensive income (loss)	$ 7,821	$ 6,076	$ 13,897	$ (18,155)	$ (1,826)	$ (19,981)

[1] The income tax benefit or expense included in other comprehensive income is attributed to the portion of foreign currency translation associated with the Company's cross-currency interest rate swaps, for which the tax effect is based on the applicable U.S. deferred income tax rate. See Note 14 to these condensed consolidated financial statements for information regarding the Company's cross-currency interest rate swaps.

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The following table presents the changes in accumulated other comprehensive income (loss), net of tax, by component for the nine months ended September 30, 2021 and 2020:

	Defined benefit and other postretirement plans	Net gain (loss) from hedging activities	Foreign currency translation	Total
December 31, 2020	$ 5,278	$ (660)	$ (19,883)	$ (15,265)
Other comprehensive income before reclassifications	877	1,425	11,474	13,776
Amounts reclassified from accumulated other comprehensive income[(1)]	128	213	—	341
Disposal of business	3,743	—	(11,779)	(8,036)
September 30, 2021	$ 10,026	$ 978	$ (20,188)	$ (9,184)
December 31, 2019	$ 3,568	$ (1,838)	$ (17,078)	$ (15,348)
Other comprehensive loss before reclassifications	—	(28)	(18,041)	(18,069)
Amounts reclassified from accumulated other comprehensive income[(1)]	(48)	939	—	891
September 30, 2020	$ 3,520	$ (927)	$ (35,119)	$ (32,526)

(1) See the following table for details about these reclassifications. Amounts in parentheses indicate debits.

The following table presents the reclassifications out of accumulated other comprehensive income for the three and nine months ended September 30, 2021 and 2020:

Details about Accumulated Other Comprehensive Income Components	Amounts Reclassified from Accumulated Other Comprehensive Income[(1)]				Affected Line Item where Income is Presented
	Three months ended September 30,		Nine months ended September 30,		
	2021	2020	2021	2020	
Amortization of defined benefit and other postretirement items:					
Prior service (cost) credit	$ (58)	$ 52	$ (174)	$ 155	Other income (expense)[(2)]
Actuarial gains (losses)	2	(28)	4	(93)	Other income (expense)[(2)]
	(56)	24	(170)	62	Total before tax
	15	(4)	42	(14)	Tax benefit (expense)
	$ (41)	$ 20	$ (128)	$ 48	Net of tax
Gains and losses on cash flow hedges:					
Interest rate caps	$ (104)	$ 611	$ (283)	$ (18)	Interest expense
Natural gas swaps	—	(467)	—	(1,229)	Cost of goods sold
	(104)	144	(283)	(1,247)	Total before tax
	26	(39)	70	308	Tax benefit
	$ (78)	$ 105	$ (213)	$ (939)	Net of tax
Total reclassifications for the period	$ (119)	$ 125	$ (341)	$ (891)	Net of tax

(1) Amounts in parentheses indicate debits to profit/loss.

(2) These accumulated other comprehensive income (loss) components are components of net periodic pension and other postretirement cost (see Note 16 to these condensed consolidated financial statements for additional details).

Treasury Stock Repurchases

Stock Repurchase Program

The Company records repurchases of its common stock for treasury at cost. Upon the reissuance of the Company's common stock from treasury, differences between the proceeds from reissuance and the average cost of the treasury stock are credited or charged to capital in excess of par value to the extent of prior credits related to the reissuance of treasury stock. If no such credits exist, the differences are charged to retained earnings.

On March 12, 2020, the Company's Board of Directors (the "Board") approved a plan to purchase up to $50,000 of Ecovyst Inc. common stock under a stock repurchase program approved by the Board. The Company may repurchase shares from time to time for cash in open market transactions or in privately negotiated transactions in accordance with applicable federal securities laws. The Company will determine the timing and the amount of any repurchases based on its evaluation of market conditions, share price and other factors. The stock repurchase program is valid until March 2022.

During the three months ended March 31, 2020, the Company repurchased 211,700 shares on the open market at an average price of $9.73, for a total of $2,059. The Company has not made any additional repurchases under the program through September 30, 2021. As of September 30, 2021, $47,941 was available for additional share repurchases under the program.

Tax Withholdings on Equity Award Vesting

In connection with the vesting of restricted stock awards, restricted stock units and performance stock units, shares of common stock may be delivered to the Company by employees to satisfy withholding tax obligations at the instruction of the employee award holders. These transactions when they occur are accounted for as stock repurchases by the Company, with the shares returned to treasury stock at a cost representing the payment by the Company of the tax obligations on behalf of the employees in lieu of shares for the vesting unit. The fair value of the shares withheld to cover tax payments were $1,470 and $1,992 for the nine months ended September 30, 2021 and 2020, respectively.

Dividends Paid

On August 4, 2021, the Board declared a special cash dividend of $3.20 per share, using after tax cash proceeds from the sale of the Performance Chemicals business. The dividend was paid on August 23, 2021 to the Company's stockholders of record at the close of business on August 12, 2021. Refer to Note 3 of these condensed consolidated financial statements for additional details.

7. Acquisition:

On March 1, 2021 (the "Closing Date"), the Company completed the acquisition of Chem32, LLC ("Chem32") as part of a stock transaction (the "Acquisition") for $44,000 in cash. The net cash paid on the Closing Date by the Company was $41,994, after certain customary adjustments for indebtedness, working capital, cash and a holdback amount pursuant to the agreement. Based in Orange, Texas, Chem32 is a leader in ex situ pre-sulfiding and pre-activation for hydro-processing catalysts.

The Acquisition was accounted for using the acquisition method of accounting. Under the acquisition method, the purchase price was allocated to the identifiable net assets acquired based on the fair values of the identifiable assets acquired and liabilities assumed as of the Closing Date. The excess of the purchase price over fair values of the identifiable net assets acquired was recorded to goodwill.

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The following table sets forth the calculation of the purchase price to the identifiable net assets acquired with respect to the Acquisition, which was substantially complete as of September 30, 2021:

	Provisional Purchase Price Allocation	Adjustments	Purchase Price Allocation
Cash paid, net of cash acquired	$ 41,994	$ 788	$ 42,782
Holdback	2,000	(1,000)	1,000
Total consideration, net of cash acquired	$ 43,994	$ (212)	$ 43,782
Recognized amounts of identifiable assets acquired and liabilities assumed:			
Receivables	$ 1,368	$ —	$ 1,368
Inventories	204	—	204
Prepaid and other current assets	351	—	351
Property, plant and equipment	5,046	—	5,046
Other intangible assets	—	22,100	22,100
Other long-term assets	38	153	191
Fair value of assets acquired	7,007	22,253	29,260
Accounts payable	207	—	207
Accrued liabilities	452	(264)	188
Fair value of net identifiable assets acquired	6,348	22,517	28,865
Goodwill	37,646	(22,729)	14,917
	$ 43,994	$ (212)	$ 43,782

In accordance with the requirements of the purchase method of accounting for acquisitions, accounts receivable and inventories were recorded at fair market value. As of the Closing Date, the fair value of accounts receivable approximated historical cost. The gross contractual amount of accounts receivable at the Closing Date was $1,368, of which there was no amount deemed uncollectible. Fair value of inventory is defined as estimated selling prices less the sum of (a) costs of disposal and (b) a reasonable profit allowance for the selling effort of the acquiring entity, which the Company determined acquired cost equalled fair value of the inventory acquired.

The Company's cost of goods sold for the three and nine months ended September 30, 2021 includes a pre-tax charge of $148 of additional amortization expense related to identified intangible assets, which would have been recorded during the reporting period if the adjustments to the provisional amounts had been recognized as of the Closing Date. The Company's other operating expense, net for the three and nine months ended September 30, 2021 includes a pre-tax charge of $1,108 of additional amortization expense related to identified intangible assets, which would have been recorded during the reporting period if the adjustments to the provisional amounts had been recognized as of the Closing Date.

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The valuation of intangibles assets acquired and the related weighted-average amortization periods are as follows:

	Amount	Weighted-Average Expected Useful Life (in years)
Intangible assets subject to amortization:		
Customer relationships	$ 16,000	10
Technical know-how	3,800	10
Contracts	700	5
Trade names	1,600	10
Total intangible assets subject to amortization	$ 22,100	

The Company's condensed consolidated financial statements include Chem32's results of operations from the Closing Date through September 30, 2021. Net sales and net income attributable to Chem32 during this period are included in the Company's condensed consolidated statement of income and are immaterial for the periods presented. Pro forma financial information has not been presented as it is immaterial for thethree and nine months ended September 30, 2021 and2020.

The Company believes that the Acquisition will enable it to offer a more robust portfolio of services within the refining industry leveraging the Company's existing relationships, which contributed to a total purchase price that resulted in the recognition of goodwill. The Company assigned all of the goodwill to the Ecoservices segment. The goodwill associated with the Acquisition is deductible for tax purposes.

8. Goodwill:

The change in the carrying amount of goodwill for the nine months ended September 30, 2021 is summarized as follows:

	Ecoservices	Catalyst Technologies	Total
Balance as of December 31, 2020	$ 311,892	$ 79,673	$ 391,565
Goodwill recognized (Note 7)	14,917	—	14,917
Foreign exchange impact	—	(354)	(354)
Balance as of September 30, 2021	$ 326,809	$ 79,319	$ 406,128

9. Other Operating Expense, Net:

A summary of other operating expense, net is as follows:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Amortization expense	$ 3,294	$ 2,173	$ 7,669	$ 6,511
Transaction and other related costs	538	67	1,620	1,264
Restructuring, integration and business optimization costs[1]	78	250	2,408	1,441
Net loss on asset disposals	2,156	642	4,535	1,245
Other, net	248	295	554	858
	$ 6,314	$ 3,427	$ 16,786	$ 11,319

[1] During the nine months ended September 30, 2021,the Company's results were impacted by costs associated with severance charges for certain executives and employees.

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10. Inventories, Net:

Inventories, net are classified and valued as follows:

	September 30, 2021	December 31, 2020
Finished products and work in process	$ 43,795	$ 48,500
Raw materials	4,273	4,289
	$ 48,068	$ 52,789
Valued at lower of cost or market:		
LIFO basis	$ 29,817	$ 31,072
Valued at lower of cost and net realizable value:		
FIFO or average cost basis	18,251	21,717
	$ 48,068	$ 52,789

11. Investments in Affiliated Companies:

The Company accounts for investments in affiliated companies under the equity method. Affiliated companies accounted for on the equity basis as of September 30, 2021 are as follows:

Company	Country	Percent Ownership
Zeolyst International	USA	50%
Zeolyst C.V.	Netherlands	50%

Following is summarized information of the combined investments[(1)]:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Sales	$ 76,195	$ 57,379	$ 218,459	$ 215,039
Gross profit	28,981	11,506	77,048	76,602
Operating income	20,414	3,183	51,576	48,603
Net income	20,717	3,584	51,204	49,745

(1) Summarized information of the combined investments is presented at 100%; the Company’s share of the net assets and net income of affiliates is calculated based on the percent ownership specified in the table above.

The Company’s investments in affiliated companies balance as of September 30, 2021 and December 31, 2020 includes net purchase accounting fair value adjustments of $239,020 and $243,899, respectively, related to the series of transactions consummated on May 4, 2016 to reorganize and combine the businesses of PQ Holdings Inc. and Eco Services Operations LLC, consisting primarily of goodwill and intangible assets such as customer relationships, technical know-how and trade names. Consolidated equity in net income from affiliates is net of $1,601 and $4,879 of amortization expense related to purchase accounting fair value adjustments for the three and nine months ended September 30, 2021, respectively. Consolidated equity in net income from affiliates is net of $1,659 and $4,975 of amortization expense related to purchase accounting fair value adjustments for the three and nine months ended September 30, 2020, respectively.

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12. Property, Plant and Equipment:

A summary of property, plant and equipment, at cost, and related accumulated depreciation is as follows:

	September 30, 2021	December 31, 2020
Land	$ 97,027	$ 93,650
Buildings	77,366	76,010
Machinery and equipment	697,989	656,502
Construction in progress	46,142	42,446
	918,524	868,608
Less: accumulated depreciation	(323,436)	(276,898)
	$ 595,088	$ 591,710

Depreciation expense was $16,369 and $16,222 for the three months ended September 30, 2021 and 2020, respectively. Depreciation expense was $49,902 and $47,857 for the nine months ended September 30, 2021 and 2020, respectively.

13. Long-term Debt:

The summary of long-term debt is as follows:

	September 30, 2021	December 31, 2020
Senior Secured Term Loan Facility due February 2027 (the "2016 Term Loan Facility")	$ —	$ 671,710
Senior Secured Term Loan Facility due February 2027 (the "2020 Term Loan Facility")	—	459,653
Senior Secured Term Loan Facility due June 2028 (the "2021 Term Loan Facility")	897,750	—
5.750% Senior Notes due 2025	—	295,000
ABL Facility	—	—
Total debt	897,750	1,426,363
Original issue discount	(9,069)	(15,641)
Deferred financing costs	(5,090)	(10,353)
Total debt, net of original issue discount and deferred financing costs	883,591	1,400,369
Less: current portion	(9,000)	—
Total long-term debt, excluding current portion	$ 874,591	$ 1,400,369

The fair value of a financial instrument is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. As of September 30, 2021 and December 31, 2020, the fair value of the term loan facilities and unsecured notes was $898,872 and $1,427,123, respectively. The fair value is classified as Level 2 based upon the fair value hierarchy (see Note 5 to these condensed consolidated financial statements for further information on fair value measurements).

2021 Term Loan Facility

In June 2021, PQ Corporation ("PQ Corp"), an indirect, wholly owned subsidiary of Ecovyst prior to the closing of the sale of the Performance Chemicals business, and Ecovyst Catalyst Technologies LLC ("Ecovyst LLC" and, following the closing of the sale of the Performance Chemicals business, the "Borrower"), an indirect, wholly owned subsidiary of the Company, entered into an agreement for a new senior secured term loan facility in an aggregate principal amount of $900,000 with an original issue discount of 0.25% and interest at a floating rate of LIBOR (with a 0.5% minimum LIBOR floor) plus 2.75% per annum (or, depending on the Borrower's first lien net leverage ratio, 2.5%). The proceeds were used to pay in full the 2020 Term Loan Facility, partially pay the 2016 Term Loan Facility and pay the associated fees and expenses. The new senior secured term loan facility requires scheduled quarterly amortization payments, each equal to 0.25% of the original principal amount of the loans under the new senior secured term loan facility.

As a result of amending the term loan facilities during the nine months ended September 30, 2021, the Company recorded $5,736 of new creditor and third-party financing costs as debt extinguishment costs. In addition, previous unamortized deferred financing costs of $1,725 and original issue discount of $3,664 associated with the previously outstanding debt were written off as debt extinguishment costs during the nine months ended September 30, 2021.

ABL Facility

In June 2021, PQ Corp also entered into a third amendment agreement (the "ABL Amendment"), which amended its ABL Credit Agreement, dated as of May 4, 2016 (the "ABL Credit Agreement" and, as amended by the ABL Amendment, the "Amended ABL Credit Agreement"). The ABL Amendment amended the ABL Credit Agreement to, among other things, following the sale of the Performance Chemicals business, decrease the aggregate amount of revolving loan commitments available to the borrowers thereunder by an aggregate amount of $150,000 to $100,000, consisting of $90,000 in U.S. commitments and $10,000 on in European commitments and extended the maturity date with respect to borrowings under the Amended ABL Credit Agreement to August 2, 2026.

As a result of the ABL Amendment, unamortized deferred financing costs of $485 and original issue discount of $107 associated with the ABL Credit Agreement were written off as debt extinguishment costs during the three and nine months ended September 30, 2021.

2016 Term Loan Facility - Repaid in 2021

Concurrent with, and using a portion of the net cash proceeds from, the divestiture of the Performance Chemicals business in August 2021, the Company repaid the remaining principal balance of $231,363 on the 2016 Term Loan Facility. The Company wrote off $849 of unamortized deferred financing costs and $2,395 of original issue discount as debt extinguishment costs during the three and nine months ended September 30, 2021.

5.750% Senior Notes due 2025 - Redeemed in 2021

Concurrent with, and using a portion of the net proceeds from, the divestiture of the Performance Chemicals business in August 2021, the Company redeemed the remaining principal balance of $295,000 of its 5.750% Senior Notes due 2025. In connection with the redemption of the 5.750% Senior Notes due 2025, the Company paid a redemption premium of $8,481 which was recorded as debt extinguishment costs during the three and nine months ended September 30, 2021. In addition, previous unamortized deferred financing costs of $2,262 and original issue discount of $1,198 associated with the previously outstanding debt were written off as debt extinguishment costs during the three and nine months ended September 30, 2021.

14. Financial Instruments:

The Company uses interest rate related derivative instruments to manage its exposure to changes in interest rates on its variable-rate debt instruments. The Company does not speculate using derivative instruments.

By using derivative financial instruments to hedge exposures to changes in interest rates, the Company exposes itself to credit risk and market risk. Credit risk is the failure of the counterparty to perform under the terms of the derivative contract. When the fair value of a derivative contract is an asset, the counterparty owes the Company, which creates credit risk for the Company. When the fair value of a derivative contract is a liability, the Company owes the counterparty and therefore, the Company is not exposed to the counterparty's credit risk in those circumstances. The Company minimizes counterparty credit risk in derivative instruments by entering into transactions with high quality counterparties. The derivative instruments entered into by the Company do not contain credit-risk-related contingent features.

Market risk is the adverse effect on the value of a derivative instrument that results from a change in interest rates. The market risk associated with the Company's derivative instruments is managed by establishing and monitoring parameters that limit the types and degree of market risk that may be undertaken.

Use of Derivative Financial Instruments to Manage Interest Rate Risk. The Company is exposed to fluctuations in interest rates on its senior secured credit facilities. Changes in interest rates will not affect the market value of such debt but will affect the Company's interest payments over the term of the loans. Likewise, an increase in interest rates could have a material impact on the Company's cash flow. The Company hedges the interest rate fluctuations on debt obligations through interest rate cap agreements. The Company records these agreements at fair value as assets or liabilities in its consolidated balance sheet. As the derivatives are designated and qualify as cash flow hedges, the gains or losses on the interest rate cap agreements are recorded in stockholders' equity as a component of OCI, net of tax. Reclassifications of the gains and losses on the interest rate cap agreements into earnings are recorded as part of interest expense in the condensed consolidated statements of income as the Company makes its interest payments on the hedged portion of its senior secured credit facilities. Fair value is determined based on estimated amounts that would be received or paid to terminate the contracts at the reporting date based on quoted market prices.

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In November 2018, the Company entered into interest rate cap agreements to mitigate interest volatility from July 2020 through July 2022, with a cap rate of 3.50% on $500,000 of notional variable-rate debt and a $3,380 premium annuitized during the effective period. In February 2020, the Company restructured its $500,000 of notional variable-rate debt interest rate cap agreements from July 2020 through July 2022, to lower the interest cap rate to 2.50% with an incremental $130 premium annuitized during the effective period. In March 2020, the Company again amended such interest rate cap agreements to lower the cap rate to 0.84% from 2.50% on $500,000 of notional variable-rate debt and paid an additional incremental $900 premium annuitized during the effective period. The term remains unchanged from July 2020 through July 2022. The total cumulative annuitized premium on the $500,000 of notional variable-rate debt is $4,410. The cap rate in effect at September 30, 2021 was 0.84% associated with the $500,000 of notional variable-rate debt.

In July 2020, the Company entered into additional interest rate cap agreements to mitigate interest rate volatility from August 2020 to August 2023, with a cap rate of 1.00% on $400,000 of notional variable-rate debt. The cap rate in effect at September 30, 2021 was 1.00% associated with the $400,000 of notional variable-rate debt.

In August 2021, PQ Corporation novated $900,000 of its interest rate caps to Ecovyst Catalyst Technologies LLC. Other than the novation, there were no other changes to the interest rate cap.

Use of Derivative Financial Instruments to Manage Foreign Currency Risk. The Company is exposed to risks related to its net investments in foreign operations due to fluctuations in foreign currency exchange rates, particularly between the United States dollar and the Euro. In February 2018, the Company entered into multiple cross-currency interest rate swap arrangements with an aggregate notional amount of €280,000 to hedge this exposure on the net investments of certain of its Euro-denominated subsidiaries in its Performance Materials and Performance Chemicals businesses. The Company recorded these swap agreements at fair value as assets or liabilities in its consolidated balance sheet. As the derivatives are designated and qualify as net investment hedges, changes in the fair value of the swaps attributable to changes in the spot exchange rates are recognized in cumulative translation adjustment (“CTA”) within OCI and are held there until the hedged net investments are sold or substantially liquidated. Upon such sale or liquidation, the amount recognized in CTA is reclassified to earnings and reported in the same line item as the gain or loss on the liquidation of the net investments. Changes in the fair value of the swaps attributable to the cross-currency basis spread are excluded from the assessment of hedge effectiveness and are recorded in current period earnings.

In March 2021, as a result of the divestitures of the Performance Materials and Performance Chemicals businesses, the Company settled its cross-currency swaps. At the date of settlement, the total notional value of the cross-currency swaps was $311,380. The Company paid $13,170 in cash to settle the swaps, which is included in net cash used in investing activities, discontinued operations in the Company’s condensed consolidated statement of cash flows for the nine months ended September 30, 2021, as the underlying subsidiary subject to the net investment hedging relationship is part of the Performance Chemicals business.

The fair values of derivative instruments held as of September 30, 2021 and December 31, 2020 are shown below:

	Balance sheet location	September 30, 2021	December 31, 2020
Derivative assets:			
Derivatives designated as cash flow hedges:			
Interest rate caps	Other long-term assets	$ 189	$ —
Total derivative assets		$ 189	$ —
Derivative liabilities:			
Derivatives designated as cash flow hedges:			
Interest rate caps	Accrued liabilities	$ 1,937	$ 1,954
Interest rate caps	Other long-term liabilities	—	1,750
Total derivative liabilities		$ 1,937	$ 3,704

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The following tables show the effect of the Company's derivative instruments designated as cash flow hedges on AOCI for the three and nine months ended September 30, 2021 and 2020:

		Three months ended September 30,			
		2021		2020	
	Location of gain (loss) reclassified from AOCI into income	Amount of gain (loss) recognized in OCI on derivatives	Amount of gain (loss) reclassified from AOCI into income	Amount of gain (loss) recognized in OCI on derivatives	Amount of gain (loss) reclassified from AOCI into income
Interest rate caps	Interest (expense) income	$ 510	$ (104)	$ 573	$ 506

		Nine months ended September 30,			
		2021		2020	
	Location of gain (loss) reclassified from AOCI into income	Amount of gain (loss) recognized in OCI on derivatives	Amount of gain (loss) reclassified from AOCI into income	Amount of gain (loss) recognized in OCI on derivatives	Amount of gain (loss) reclassified from AOCI into income
Interest rate caps	Interest (expense) income	$ 1,901	$ (283)	$ (347)	$ (18)

The following tables show the effect of the Company's cash flow hedge accounting on the condensed consolidated statements of income for the three and nine months ended September 30, 2021 and 2020:

	Location and amount of gain (loss) recognized in income on cash flow hedging relationships			
	Three months ended September 30,			
	2021		2020	
	Cost of goods sold	Interest (expense) income	Cost of goods sold	Interest (expense) income
Total amounts of income and expense line items presented in the statement of income in which the effects of cash flow hedges are recorded	$ (113,784)	$ (9,005)	$ (89,844)	$ (10,430)
The effects of cash flow hedging:				
Gain (loss) on cash flow hedging relationships:				
Interest contracts:				
Amount of gain (loss) reclassified from AOCI into income	—	(104)	—	506

	Location and amount of gain (loss) recognized in income on cash flow hedging relationships			
	Nine months ended September 30,			
	2021		2020	
	Cost of goods sold	Interest (expense) income	Cost of goods sold	Interest (expense) income
Total amounts of income and expense line items presented in the statement of income in which the effects of cash flow hedges are recorded	$ (318,768)	$ (28,202)	$ (258,462)	$ (40,864)
The effects of cash flow hedging:				
Gain (loss) on cash flow hedging relationships:				
Interest contracts:				
Amount of gain (loss) reclassified from AOCI into income	—	(283)	—	(18)

The amount of unrealized losses in AOCI related to the Company's cash flow hedges that is expected to be reclassified to the condensed consolidated statement of income over the next twelve months is $805 as of September 30, 2021.

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The following tables show the effect of the Company's net investment hedges on AOCI and the condensed consolidated statements of income for the three and nine months ended September 30, 2021 and 2020:

	Amount of gain (loss) recognized in OCI on derivative		Location of gain (loss) reclassified from AOCI into income	Amount of gain (loss) reclassified from AOCI into income		Location of gain (loss) recognized in income on derivative (amount excluded from effectiveness testing)	Amount of gain (loss) recognized in income on derivative (amount excluded from effectiveness testing)	
	Three months ended September 30,			Three months ended September 30,			Three months ended September 30,	
	2021	2020		2021	2020		2021	2020
Cross-currency interest rate swaps	$ —	$ (5,206)	Net (loss) income from discontinued operations, net of tax	$ 9,754	$ —	Interest (expense) income	$ —	$ 1,552

	Amount of pre-tax gain (loss) recognized in OCI on derivative		Location of gain (loss) reclassified from AOCI into income	Amount of gain (loss) reclassified from AOCI into income		Location of gain (loss) recognized in income on derivative (amount excluded from effectiveness testing)	Amount of gain (loss) recognized in income on derivative (amount excluded from effectiveness testing)	
	Nine months ended September 30,			Nine months ended September 30,			Nine months ended September 30,	
	2021	2020		2021	2020		2021	2020
Cross-currency interest rate swaps	$ 9,787	$ 9,603	Net (loss) income from discontinued operations, net of tax	$ 9,754	$ —	Interest (expense) income	$ 545	$ 3,244

15. Income Taxes:

The effective income tax rate for the three months ended September 30, 2021 was35.6% compared to (1,579.7)% for the three months ended September 30, 2020. The effective income tax rate for the nine months ended September 30, 2021 was (610.9)% compared to (149.9)% for the nine months ended September 30, 2020. The Company's effective income tax rate has fluctuated primarily due to changes in income mix, the impacts of the Global Intangible Low Taxed Income ("GILTI") tax rules, discrete impacts related to intraperiod allocation revaluation of deferred tax assets and liabilities as a result of the divestiture of the Performance Chemicals business, tax rate changes and changes in foreign exchange gains and losses, which create permanent differences in certain jurisdictions.

The difference between the U.S. federal statutory income tax rate and the Company's effective income tax rate for the nine months ended September 30, 2021 was mainly due to state and local taxes, discrete tax impacts related to intraperiod allocation revaluation of deferred tax assets and liabilities as a result of the divestiture of the Performance Chemicals business, tax rate changes and the tax effect of permanent differences related to foreign currency exchange gain or loss.

The difference between the U.S. federal statutory income tax rate and the Company's effective income tax rate for the nine months ended September 30, 2020 was mainly due to state and local taxes, GILTI and the impact of intra-period allocation as a result of the Performance Chemicals and Performance Materials businesses being classified as held for sale.

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16. Benefit Plans:

The following information is provided for (1) the Company-sponsored defined benefit pension plans covering employees in the U.S. and certain employees at its foreign subsidiaries and (2) the Company-sponsored unfunded plans to provide certain health care benefits to retired employees in the U.S.

Components of net periodic expense (benefit) are as follows:

Defined Benefit Pension Plans

	U.S.		Foreign	
	Three months ended September 30,		Three months ended September 30,	
	2021	2020	2021	2020
Service cost	$ —	$ 192	$ —	$ 280
Interest cost	551	675	63	78
Expected return on plan assets	(1,093)	(970)	(63)	(74)
Amortization of net loss	—	—	—	24
Settlement (gain) recognized	(26)	—	—	—
Net periodic expense (benefit)	$ (568)	$ (103)	$ —	$ 308

	U.S.		Foreign	
	Nine months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Service cost	$ —	$ 577	$ —	$ 798
Interest cost	1,652	2,026	193	221
Expected return on plan assets	(3,280)	(2,910)	(193)	(212)
Amortization of net loss	—	—	—	70
Settlement (gain) recognized	(26)	—	—	—
Net periodic (benefit) expense	$ (1,654)	$ (307)	$ —	$ 877

Other Postretirement Benefit Plans

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Interest cost	4	5	13	14
Amortization of prior service credit	(58)	(58)	(174)	(174)
Amortization of net loss	2	—	4	1
Net periodic benefit	$ (52)	$ (53)	$ (157)	$ (159)

17. Commitments and Contingent Liabilities:

There is a risk of environmental impact in chemical manufacturing operations. The Company's environmental policies and practices are designed to comply with existing laws and regulations and to minimize the possibility of significant environmental impact. The Company is also subject to various other lawsuits and claims with respect to matters such as governmental regulations, labor and other actions arising out of the normal course of business. All claims that are probable and reasonably estimable have been accrued for in the Company's condensed consolidated financial statements. When these matters are ultimately concluded and determined, the Company believes that there will be no material adverse effect on its consolidated financial position, results of operations or liquidity.

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18. Reportable Segments:

Summarized financial information for the Company's reportable segments is shown in the following table:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Sales:				
Ecoservices	$ 137,550	$ 107,604	$ 358,509	$ 298,727
Catalyst Technologies[(1)]	29,878	23,071	82,495	73,143
Total	$ 167,428	$ 130,675	$ 441,004	$ 371,870
Segment Adjusted EBITDA:[(2)]				
Ecoservices	$ 51,920	$ 44,272	$ 125,372	$ 116,451
Catalyst Technologies[(3)]	25,441	11,762	64,623	59,741
Total Segment Adjusted EBITDA[(4)]	$ 77,361	$ 56,034	$ 189,995	$ 176,192

(1) Excludes the Company's proportionate share of sales from the Zeolyst International and Zeolyst C.V. joint ventures (collectively, the "Zeolyst Joint Venture") accounted for using the equity method (see Note 11 to these condensed consolidated financial statements for further information). The proportionate share of sales is $32,820 and $26,552 for the three months ended September 30, 2021 and 2020, respectively. The proportionate share of sales is $94,984 and $99,695 for the nine months ended September 30, 2021 and 2020, respectively.

(2) The Company defines Adjusted EBITDA as EBITDA adjusted for certain items as noted in the reconciliation below. Management evaluates the performance of its segments and allocates resources based on several factors, of which the primary measure is Adjusted EBITDA. Adjusted EBITDA should not be considered as an alternative to net income as an indicator of the Company's operating performance. Adjusted EBITDA as defined by the Company may not be comparable with EBITDA or Adjusted EBITDA as defined by other companies.

(3) The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $14,493 for the three months ended September 30, 2021, which includes $8,780 of equity in net income plus $1,601 of amortization of investment in affiliate step-up and $4,112 of joint venture depreciation, amortization and interest. The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $ 5,331 for the three months ended September 30, 2020, which includes $76 of equity in net income plus $1,658 of amortization of investment in affiliate step-up and $3,597 of joint venture depreciation, amortization and interest.

The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $37,085 for the nine months ended September 30, 2021, which includes $20,794 of equity in net income plus $4,879 of amortization of investment in affiliate step-up and $11,412 of joint venture depreciation, amortization and interest. The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $ 35,911 for the nine months ended September 30, 2020, which includes $19,882 of equity in net income plus $4,975 of amortization of investment in affiliate step-up and $11,054 of joint venture depreciation, amortization and interest.

(4) Total Segment Adjusted EBITDA differs from the Company's consolidated Adjusted EBITDA due to unallocated corporate expenses.

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A reconciliation of net income (loss) from continuing operations to Segment Adjusted EBITDA is as follows:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Reconciliation of net income (loss) from continuing operations to Segment Adjusted EBITDA				
Net income (loss) from continuing operations	$ 4,689	$ (22,659)	$ (5,929)	$ 8,311
Provision (benefit) for income taxes	2,591	21,310	5,095	(4,985)
Interest expense, net	9,005	10,430	28,202	40,864
Depreciation and amortization	20,599	19,122	60,084	56,543
EBITDA	36,884	28,203	87,452	100,733
Joint venture depreciation, amortization and interest	4,112	3,597	11,412	11,054
Amortization of investment in affiliate step-up	1,601	1,659	4,879	4,975
Debt extinguishment costs	15,185	14,004	26,902	16,517
Net loss on asset disposals	2,156	642	4,535	1,245
Foreign exchange losses (gains)	922	(4,286)	4,803	(577)
LIFO benefit	(1,295)	(1,261)	(1,998)	(4,902)
Transaction and other related costs	538	197	1,620	1,389
Equity-based compensation	10,193	4,387	22,837	13,324
Restructuring, integration and business optimization expenses	78	250	2,408	1,445
Defined benefit pension plan benefit	(1,029)	(155)	(2,219)	(466)
Other	30	784	1,723	1,959
Adjusted EBITDA	69,375	48,021	164,354	146,696
Unallocated corporate expenses	7,986	8,013	25,641	29,496
Segment Adjusted EBITDA	$ 77,361	$ 56,034	$ 189,995	$ 176,192

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19. Stock-Based Compensation:

The Company is authorized to issue shares for common stock awards to employees, directors and affiliates of the Company in connection with the Ecovyst Inc. (formerly PQ Group Holdings Inc.) 2017 Omnibus Incentive Plan, as Amended and Restated (the "2017 Plan"). During the nine months ended September 30, 2021, the Company granted 1,697,623 restricted stock units and 211,985 performance stock units (at target) under the 2017 Plan as part of its equity incentive compensation program. Each restricted stock unit provides the recipient with the right to receive a share of common stock subject to graded vesting terms based on service, which for the awards granted during the nine months ended September 30, 2021, generally requires approximately one year of service for members of the Company's board of directors and approximately three years of service for employees.

The performance stock units granted during the nine months ended September 30, 2021 provide the recipients with the right to receive shares of common stock dependent on the achievement of a total shareholder return ("TSR") goal, and are generally subject to the provision of service through the vesting date of the award. The performance period for the TSR goal is measured based on a three-year performance period from January 1, 2021 through December 31, 2023. The TSR goal is based on the Company's actual TSR percentage increase over the performance period. Depending on the Company's performance relative to the TSR goal, each performance stock unit award recipient is eligible to earn a percentage of the target number of shares granted to the recipient, ranging from zero to 200%. The performance stock units, to the extent earned, will vest on the date the Company's compensation and governance committee certifies the achievement of the performance metric for the three-year period ending December 31, 2023, which will occur subsequent to the end of the performance period but before the Company files its annual consolidated financial statements for the year ending December 31, 2023.

The value of the restricted stock units granted during the nine months ended September 30, 2021 was based on the average of the high and low trading prices of the Company's common stock on the NYSE on the preceding trading day, in accordance with the Company's policy for valuing such awards. Compensation expense related to the restricted stock units is recognized on a straight-line basis over the respective vesting period.

The TSR goal of the performance stock units granted during the nine months ended September 30, 2021 is considered a market condition as opposed to a vesting condition. Because a market condition is not considered a vesting condition, it is reflected in the grant date fair value of the award, and the associated compensation cost based on the fair value of the award is recognized over the performance period, regardless of whether the Company actually achieves the market condition or the level of achievement, as long as service is provided by the recipient. The Company used a Monte Carlo simulation to estimate the fair value of the portion of the awards subject to the TSR goal. The following table provides the assumptions used to determine the grant date fair value of the market condition-dependent / TSR goal-based portion of the Company's performance stock units granted during the nine months ended September 30, 2021 using a Monte Carlo simulation:

Expected dividend yield		—	%
Risk-free interest rate		0.20	%
Expected volatility		41.70	%
Expected term (in years)		2.95	
Grant date fair value	$	13.21	

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The following table summarizes the activity for the Company's restricted stock units and performance stock units for the nine months ended September 30, 2021:

	Restricted Stock Units		Performance Stock Units	
	Number of Units	Weighted Average Grant Date Fair Value (per share)	Number of Units	Weighted Average Grant Date Fair Value (per share)
Nonvested as of December 31, 2020	1,841,139	$ 16.14	965,736	$ 17.69
Granted	1,697,623	$ 15.39	211,985	$ 13.21
Vested	(773,619)	$ 16.00	—	$ —
Forfeited	(69,877)	$ 15.83	(15,211)	$ 16.75
Nonvested as of September 30, 2021	2,695,266	$ 15.71	1,162,510	$ 16.92

2021 Modifications

As more fully described in Note 6 to these condensed consolidated financial statements, the Company's Board of Directors declared a special cash dividend of $3.20 per share to stockholders of record as of the close of business on August 12, 2021. The dividend declaration also included a dividend equivalent for all unvested restricted stock units, performance stock units and restricted stock awards (collectively, the "awards") as of August 23, 2021 equal to $ 3.20 per award. Additionally, the Company's Board of Directors approved a reduction in the strike price on all outstanding vested and unvested stock options by the amount of the dividend payment.

Further, with respect to stock options and awards held by employees of Performance Chemicals at the time of the sale (see Note 3 to these condensed consolidated financial statements), the Company's Board of Directors approved modifications to the post-termination stock option exercise, and stock option and award vesting periods. The modifications provide that all stock options held by Performance Chemicals employees that were vested as of the date of the sale are eligible to be exercised for a period of one year from the date of the sale. Additionally, modifications to unvested stock options and awards allow holders to continue to vest in those instruments under the original terms of the instruments for a period of one year from the date of sale. The terms of the modifications to the Performance Chemicals awards are contingent upon the employee providing continued service to the Buyer. The modifications impacted all holders of the Company's stock options and awards and resulted in incremental stock-based compensation expense of $6,667 recognized during the three and nine months ended September 30, 2021. Of this amount, $2,635 was included in loss from discontinued operations, net of tax on the Company's consolidated statements of income for the three and nine months ended September 30, 2021.

(Dollars in thousands, except share and per share amounts)

Total Stock-Based Compensation Expense

Stock-based compensation expense for the Company is as follows:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Continuing operations	10,193	4,355	$ 22,837	$ 13,324
Discontinued operations	4,375	1,782	8,066	5,099
Stock-based compensation expense	14,568	6,137	30,903	18,423
Continuing operations	(2,494)	(1,079)	(5,589)	(3,301)
Discontinued operations	(1,071)	(442)	(1,974)	(1,264)
Income tax benefit	(3,565)	(1,521)	(7,563)	(4,565)
Continuing operations	7,699	3,276	17,248	10,023
Discontinued operations	3,304	1,340	6,092	3,835
Stock-based compensation expense, net of income tax benefit	$ 11,003	$ 4,616	$ 23,340	$ 13,858

With the new grants of restricted stock units and performance stock units during the nine months ended September 30, 2021, unrecognized compensation cost at September 30, 2021 was $31,800 for restricted stock units and $8,991 for performance stock units considered probable of vesting. The weighted-average period over which these costs are expected to be recognized at September 30, 2021 is 1.54 years for the restricted stock units and1.16 years for the performance stock units. Activity related to the Company's stock options and restricted stock awards was not material for the nine months ended September 30, 2021.

20. Earnings per Share:

Basic earnings per share is calculated as income (loss) available to common stockholders, divided by the weighted average number of common shares outstanding during the period. The weighted average number of common shares outstanding during the period for the computation of basic earnings per share excludes restricted stock awards that have legally been issued but are nonvested during the period, as the sale of these shares is prohibited pending satisfaction of certain vesting conditions by the award recipients in order to earn the rights to the shares.

Diluted earnings per share is calculated as income (loss) available to common stockholders, divided by the weighted average number of common and potential common shares outstanding during the period, if dilutive. Potential common shares reflect (1) unvested restricted stock awards and restricted stock units with service vesting conditions, (2) performance stock units with vesting conditions considered probable of achievement and (3) options to purchase common stock, all of which have been included in the diluted earnings per share calculation using the treasury stock method.

The reconciliation from basic to diluted weighted average shares outstanding is as follows:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Weighted average shares outstanding – Basic	136,129,591	135,106,969	136,111,555	135,292,163
Dilutive effect of unvested common shares and restricted stock units with service conditions, performance stock units considered probable of vesting and assumed stock option exercises and conversions	1,224,836	—	—	895,870
Weighted average shares outstanding – Diluted	137,354,427	135,106,969	136,111,555	136,188,033

(Dollars in thousands, except share and per share amounts)

Basic and diluted loss per share are calculated as follows:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Numerator:				
Net income (loss) attributable to Ecovyst Inc.	$ (71,259)	$ 7,512	$ (165,384)	$ 23,662
Denominator:				
Weighted average shares outstanding – Basic	136,129,591	135,106,969	136,111,555	135,292,163
Weighted average shares outstanding – Diluted	137,354,427	135,106,969	136,111,555	136,188,033
Net loss per share:				
Basic (loss) income per share	$ (0.52)	$ 0.06	$ (1.22)	$ 0.17
Diluted (loss) income per share	$ (0.52)	$ 0.06	$ (1.22)	$ 0.17

The table below presents the details of the Company's weighted average equity-based awards outstanding during each respective period that were excluded from the calculation of diluted earnings per share:

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Restricted stock awards with performance only targets not yet achieved	828,967	950,174	852,822	1,323,270
Stock options with performance only targets not yet achieved	375,733	503,526	376,448	509,782
Anti-dilutive restricted stock awards, restricted stock units and performance stock units	—	1,539,506	—	1,432,906
Anti-dilutive stock options	—	844,475	4,221	846,578

Restricted stock awards and stock options with performance only vesting conditions were not included in the dilution calculation, as the performance targets have not been achieved nor were probable of achievement as of the end of the respective periods. On a weighted average basis, options to purchase 603,159 shares of common stock at the historical exercise price of $16.97 per share and 241,316 shares of common stock at the historical exercise price of $17.50 per share for the three months ended September 30, 2020, were excluded from the computation of diluted earnings per share, because the combination of the options' exercise price and remaining unamortized stock-based compensation expense was greater than the average market price of the common shares. On a weighted average basis, options to purchase 605,262 shares of common stock at the historical exercise price of $16.97 per share and 241,316 shares of common stock at the historical exercise price of $17.50 per share for the nine months ended September 30, 2020, were excluded from the computation of diluted earnings per share, because the combination of the options' exercise price and remaining unamortized stock-based compensation expense was greater than the average market price of the common shares. The stock options with a historical exercise price of $16.97 per share expire on October 2, 2027, while the stock options with a historical exercise price of $17.50 per share expire on August 9, 2028. Anti-dilutive awards are not included in the dilution calculation, as their inclusion would have the effect of increasing diluted income per share.

ECOVYST INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in thousands, except share and per share amounts)
(unaudited)

21. Supplemental Cash Flow Information:

With the exception of operating leases, the following table presents supplemental cash flow information for the consolidated Company:

	Nine months ended September 30,	
	2021	2020
Cash paid during the period for:		
Income taxes, net of refunds	$ 13,520	$ 21,507
Interest(1)	43,115	75,345
Non-cash investing activity:		
Capital expenditures acquired on account but unpaid as of the period end	3,052	7,425
Right-of-use assets obtained in exchange for new lease liabilities (non-cash):		
Operating leases	7,946	8,376

(1) Cash paid for interest is shown net of capitalized interest for the periods presented and excludes $2,307 and $4,622 of net interest proceeds on swaps designated as net investment hedges for the nine months ended September 30, 2021 and 2020, respectively, which are included within cash flows from investing activities, discontinued operations in the Company's condensed consolidated statements of cash flows.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheets as of September 30, 2021 and 2020 to the total of the same amounts shown in the condensed consolidated statements of cash flows for the nine months then ended:

	September 30,	
	2021	2020
Cash and cash equivalents	$ 104,752	$ 122,891
Restricted cash included in prepaid and other current assets	—	1,596
Total cash, cash equivalents and restricted cash shown in the condensed consolidated statements of cash flows	$ 104,752	$ 124,487

22. Subsequent Events:

The Company has evaluated subsequent events since the balance sheet date and determined that there are no additional items to disclose.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

Unless the context requires otherwise, references in this report to "Ecovyst," "the company," "we," "us" or "our" refer to Ecovyst Inc. and its consolidated subsidiaries.

Forward-looking Statements

This periodic report on Form 10-Q ("Form 10-Q") includes statements that express our opinions, expectations, beliefs, plans, objectives, assumptions or projections regarding future events or future results and therefore are, or may be deemed to be, "forward-looking statements". The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "should" and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short- and long-term business operations and objectives, and financial needs. Examples of forward-looking statements include, but are not limited to, our financial results and our liquidity, including our belief that our existing cash, cash equivalents and cash flow from operations, combined with availability under our asset based lending revolving credit facility will be sufficient to meet our presently anticipated future cash needs for at least the next 12 months. These forward-looking statements are subject to a number of risks, uncertainties and assumptions. Moreover, we operate in a very competitive and rapidly changing environment and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed herein may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Some of the key factors that could cause actual results to differ from our expectations include risks related to the following:

- the impact of the ongoing COVID-19 pandemic on the global economy and financial markets, as well as on our business and our suppliers, and the response of our company and governments to the outbreak, including associated containment, remediation and vaccination efforts;
- as a global business, we are exposed to local business risks in different countries;
- we are affected by general economic conditions and economic downturns;
- exchange rate fluctuations could adversely affect our financial condition, results of operations and cash flows;
- our international operations require us to comply with anti-corruption laws, trade and export controls and regulations of the U.S. government and various international jurisdictions in which we do business;
- alternative technology or other changes in our customers' products may reduce or eliminate the need for certain of our products;
- our new product development and research and development efforts may not succeed and our competitors may develop more effective or successful products;
- our elevated level of indebtedness could adversely affect our financial condition;
- if we are unable to pass on increases in raw material prices, including natural gas, to our customers or to retain or replace our key suppliers, our results of operations and cash flows may be negatively affected;
- we face substantial competition in the industries in which we operate;
- we are subject to the risk of loss resulting from non-payment or non-performance by our customers;
- we rely on a limited number of customers for a meaningful portion of our business;
- multi-year customer contracts in our Ecoservices segment are subject to potential early termination and such contracts may not be renewed at the end of their respective terms;
- our quarterly results of operations are subject to fluctuations because demand for some of our products is seasonal;
- our growth projects may result in significant expenditures before generating revenues, if any, which may materially and adversely affect our ability to implement our business strategy;
- we may be liable to damages based on product liability claims brought against us or our customers for costs associated with recalls of our or our customers' products;
- we are subject to extensive environmental, health and safety regulations and face various risks associated with potential non-compliance or releases of hazardous materials;

- existing and proposed regulations to address climate change by limiting greenhouse gas emissions may cause us to incur significant additional operating and capital expenses and may impact our business and results of operations;
- production and distribution of our products could be disrupted for a variety of reasons, and such disruptions could expose us to significant losses or liabilities;
- the insurance that we maintain may not fully cover all potential exposures;
- we could be subject to damages based on claims brought against us by our customers or lose customers as a result of the failure of our products to meet certain quality specifications;
- our failure to protect our intellectual property and infringement on the intellectual property rights of third parties;
- losses and damages in connection with information technology risks could adversely affect our operations; and
- other factors set forth in Part I, “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2020.

The forward-looking statements included herein are made only as of the date hereof. You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this Form 10-Q to conform these statements to actual results or to changes in our expectations.

Overview

We are a leading integrated and innovative global provider of specialty catalysts and services. We believe that our products, which are predominantly inorganic, and services contribute to improving the sustainability of the environment.

In connection with the closing of the sale of the Performance Chemicals business, we changed our name from “PQ Group Holdings Inc.” to “Ecovyst Inc.”, changed the ticker symbol of our common stock listed on the New York Stock Exchange from “PQG” to “ECVT” and rebranded our former segments from “Refining Services” to “Ecoservices” and “Catalysts” to “Catalyst Technologies.” We conduct operations through these two reporting segments:

Ecoservices: We are a leading provider of sulfuric acid recycling services to North American refineries for the production of alkylate, an essential gasoline component for lowering vapor pressure and increasing octane to meet stringent gasoline specifications and fuel efficiency standards. We are also a leading North American producer of on-purpose virgin sulfuric acid for water treatment, mining, and industrial applications.

Catalyst Technologies: We are a global supplier of finished silica catalysts and catalyst supports necessary to produce high strength and high stiffness plastics used in packaging films, bottles, containers, and other molded applications. This segment includes our 50% interest in the Zeolyst Joint Venture, where we are a leading global supplier of zeolites used for catalysts that remove nitric oxide from diesel engine emissions as well as sulfur from fuels during the refining process.

Recent Divestitures

On December 14, 2020, we completed the sale of our Performance Materials business for $650.0 million, which was subject to certain adjustments for indebtedness, working capital and cash at the closing of the transaction. The results of operations, financial condition, and cash flows for the Performance Materials business are presented herein as discontinued operations. Except where noted, any tables, percentages or metrics included within this filing exclude the results of our former Performance Materials business. Refer to Note 3 to our condensed consolidated financial statements for additional information.

On August 1, 2021, we completed the sale of our Performance Chemicals business for $1.1 billion, subject to certain adjustments set forth in the agreement. We used a portion of the net cash proceeds to repay the entire outstanding principal balance of $231.4 million on the Senior Secured Term Loan Facility due February 2027 and the entire outstanding principal balance of $295.0 million on the 5.750% Senior Notes due 2025 (the “Senior Notes”). The Senior Notes were redeemed at a redemption price equal to the sum of 102.875% of the principal amount of the Senior Notes plus accrued and unpaid interest to, but excluding, August 2, 2021. Additionally, our Board of Directors (the “Board”) declared a special cash dividend of $3.20 per share, paid on August 23, 2021, to stockholders of record as of the close of business on August 12, 2021. The results of operations, financial condition, and cash flows for the Performance Chemicals business are presented herein as discontinued operations. Except where noted, any tables, percentages or metrics included within this filing exclude the results of our Performance Chemicals business. Refer to Note 3 to our condensed consolidated financial statements for additional information.

Key Performance Indicators

Adjusted EBITDA and Adjusted Net Income

Adjusted EBITDA and adjusted net income are financial measures that are not prepared in accordance with accounting principles generally accepted in the United States ("GAAP") and that we use to evaluate our operating performance, for business planning purposes and to measure our performance relative to that of our competitors. Adjusted EBITDA and adjusted net income are presented as key performance indicators as we believe these financial measures will enhance a prospective investor's understanding of our results of operations and financial condition. EBITDA consists of net income (loss) attributable to continuing operations before interest, taxes, depreciation and amortization. Adjusted EBITDA consists of EBITDA adjusted for (i) non-operating income or expense, (ii) the impact of certain non-cash, nonrecurring or other items included in net income (loss) and EBITDA that we do not consider indicative of our ongoing operating performance, and (iii) depreciation, amortization and interest of our 50% share of the Zeolyst Joint Venture. Adjusted net income consists of net income (loss) attributable to continuing operations adjusted for (i) non-operating income or expense and (ii) the impact of certain non-cash, nonrecurring or other items included in net income (loss) that we do not consider indicative of our ongoing operating performance. We believe that these non-GAAP financial measures provide investors with useful financial metrics to assess our operating performance from period-to-period by excluding certain items that we believe are not representative of our core business.

You should not consider adjusted EBITDA or adjusted net income in isolation or as alternatives to the presentation of our financial results in accordance with GAAP. The presentation of adjusted EBITDA and adjusted net income financial measures may differ from similar measures reported by other companies and may not be comparable to other similarly titled measures. In evaluating adjusted EBITDA and adjusted net income, you should be aware that we are likely to incur expenses similar to those eliminated in this presentation in the future and that certain of these items could be considered recurring in nature. Our presentation of adjusted EBITDA and adjusted net income should not be construed as an inference that our future results will be unaffected by unusual or nonrecurring items. Reconciliations of adjusted EBITDA and adjusted net income to GAAP net income (loss) are included in the results of operations discussion that follows for each of the respective periods.

Key Factors and Trends Affecting Operating Results and Financial Condition

Sales

Overall economic demand has significantly rebounded since the 2020 lows that resulted from the impact of COVID-19. Refineries have seen demand return with increasing miles driven, recovery from winter storm Uri and a general increase in economic activity. Polyethlene demand remains strong driven by the growing consumer demand for films and packaging. Higher refinery utilization rates are increasing catalyst demand for both traditional and renewable fuels on the continued recovery in vehicle miles driven.

In February 2021, the Gulf Coast of the United States experienced significant and unexpectedly severe weather from winter storm Uri. Extended freezing temperatures led to slowdowns or shutdowns at nearly all refineries and caused extensive damage due to frozen piping. Some refineries and facilities remained down for nearly a month. Our Ecoservices facilities located in the Gulf experienced damage, which required additional maintenance and some plant shutdowns.

Our Silica Catalysts product group, which is a part of our Catalyst Technologies segment, experiences demand fluctuations based upon the timing of our customer's fixed bed catalyst replacements.

Sales in our Ecoservices and Catalyst Technologies segments are made on both a purchase order basis and pursuant to long-term contracts.

Cost of Goods Sold

Cost of goods sold consists of variable product costs, fixed manufacturing expenses, depreciation expense and freight expenses. Variable product costs include all raw materials, energy and packaging costs that are directly related to the manufacturing process. Fixed manufacturing expenses include plant employment costs, manufacturing overhead and maintenance costs.

The primary raw materials for our Ecoservices segment include spent sulfuric acid, sulfur, acids, bases (including sodium hydroxide, or "caustic soda"), and certain metals. Spent sulfuric acid for our Ecoservices segment is supplied by customers for a nominal charge as part of their contracts. The primary raw materials used in the manufacture of products in our Catalyst Technologies segments include sodium silicate and cesium hydroxide.

Most of our Ecoservices contracts feature take-or-pay volume protection and/or quarterly price adjustments for commodity inputs, labor, the Chemical Engineering Index (U.S. chemical plant construction cost index) and natural gas. Over 80% of our Ecoservices segment sales for the year ended December 31, 2020 were under contracts featuring quarterly price adjustments. The price adjustments generally reflect actual costs for producing sulfuric acid and tend to protect us from volatility in labor, fixed costs and raw material pricing. The take-or-pay volume protection allows us to cover fixed costs through intermittent, temporary production issues at customer refineries.

While natural gas is not a direct feedstock for any product, natural gas powered machinery and equipment are used to heat raw materials and create the chemical reactions necessary to produce end-products. We maintain multiple suppliers wherever possible and structure our customer contracts when possible to allow for the pass-through of raw material, labor and natural gas costs.

Joint Ventures

We account for our investments in our equity joint ventures under the equity method. Our largest joint venture, the Zeolyst Joint Venture, manufactures high performance, specialty, zeolite-based catalysts for use in the packaging and engineered plastics, emission control, refining and petrochemical industries and other areas of the broader chemicals industry. Demand for the Zeolyst Joint Venture products fluctuates based upon the timing of our customer's fixed bed catalyst replacements. We share proportionally in the management of our joint ventures with the other parties to each such joint venture.

Seasonality

Our regeneration services product group, which is a part of our Ecoservices segment, typically experiences seasonal fluctuations as a result of higher demand for gasoline products in the summer months and lower demand in the winter months. These demand fluctuations result in higher sales and working capital requirements in the second and third quarter.

Foreign Currency

As a global business, we are subject to the impact of gains and losses on currency translations, which occur when the financial statements of foreign operations are translated into U.S. dollars. We operate in various geographies with approximately 10% of our sales for the nine months ended September 30, 2021 and the year ended December 31, 2020 in currencies other than the U.S. dollar. Because our consolidated financial results are reported in U.S. dollars, sales or earnings generated in currencies other than the U.S. dollar can result in a significant increase or decrease in the amount of those sales and earnings when translated to U.S. dollars. The foreign currency to which we have the most significant exchange rate exposure is the British pound.

Results of Operations

Three Months Ended September 30, 2021 Compared to the Three Months Ended September 30, 2020

Highlights

The following is a summary of our financial performance for the three months ended September 30, 2021 compared with the three months ended September 30, 2020.

Sales

- Sales increased $36.7 million to $167.4 million. The increase in sales was primarily due to the impact of the pass-through of higher sulfur costs and an increase in demand for our polyethylene and chemical catalysts.

Gross Profit

- Gross profit increased $12.8 million to $53.6 million. The increase in gross profit was primarily due to higher sales volumes and favorable product mix, which was partially offset by higher production and maintenance costs.

Operating Income

- Operating income increased by $3.7 million to $22.5 million. The increase in operating income was due to an increase in gross profit, which was partly offset by higher other operating expenses.

Equity in Net Income of Affiliated Companies

- Equity in net income of affiliated companies for the three months ended September 30, 2021 was $8.8 million, compared to $0.1 million for the three months ended September 30, 2020. The increase of $8.7 million was due to higher earnings generated by the Zeolyst Joint Venture for the three months ended September 30, 2021.

The following is our unaudited condensed consolidated statements of income and a summary of financial results for the three months ended September 30, 2021 and 2020:

	Three months ended September 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Sales	$ 167.4	$ 130.7	$ 36.7	28.1 %
Cost of goods sold	113.8	89.9	23.9	26.6 %
Gross profit	53.6	40.8	12.8	31.4 %
Gross profit margin	*32.0 %*	*31.2 %*		
Selling, general and administrative expenses	24.8	18.7	6.1	32.6 %
Other operating expense, net	6.3	3.3	3.0	90.9 %
Operating income	22.5	18.8	3.7	19.7 %
Operating income margin	*13.4 %*	*14.4 %*		
Equity in net (income) from affiliated companies	(8.8)	(0.1)	(8.7)	NM
Interest expense, net	9.0	10.4	(1.4)	(13.5)%
Debt extinguishment costs	15.2	14.0	1.2	8.6 %
Other income, net	(0.2)	(4.1)	3.9	(95.1)%
Income (loss) before income taxes and noncontrolling interest	7.3	(1.4)	8.7	(621.4)%
Provision for income taxes	2.6	21.3	(18.7)	(87.8)%
Effective tax rate	*35.6 %*	*(1,579.7)%*		
Net income (loss) from continuing operations	4.7	(22.7)	27.4	(120.7)%
Net (loss) income from discontinued operations, net of tax	(75.9)	30.5	(106.4)	(348.9)%
Net (loss) income	(71.2)	7.8	(79.0)	NM
Less: Net income attributable to the noncontrolling interest - discontinued operations	0.1	0.3	(0.2)	(66.7)%
Net (loss) income attributable to Ecovyst Inc.	$ (71.3)	$ 7.5	$ (78.8)	NM

Sales

	Three months ended September 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Sales:				
Ecoservices	$ 137.5	$ 107.6	$ 29.9	27.8 %
Catalyst Technologies	29.9	23.1	6.8	29.4 %
Total sales	$ 167.4	$ 130.7	$ 36.7	28.1 %

Ecoservices: Sales in Ecoservices for the three months ended September 30, 2021 were $137.5 million, an increase of $29.9 million, or 27.8%, compared to sales of $107.6 million for the three months ended September 30, 2020. The increase in sales was due to higher average selling prices of $25.3 million and an increase in volumes of $4.6 million.

Higher average selling prices were primarily a result of the pass-through of higher sulfur costs of $15.3 million within our virgin sulfuric acid product group and the pass-through of other raw material costs within our regenerations services product group. The increase in volumes was primarily driven by sales from the Chem32 acquisition as well as increased sales of regeneration services.

Catalyst Technologies: Sales in Catalyst Technologies for the three months ended September 30, 2021 were $29.9 million, an increase of $6.8 million, or 29.4%, compared to sales of $23.1 million for the three months ended September 30, 2020. The increase in sales was due to an increase in volumes of $11.6 million partially offset by lower average selling prices of $5.2 million. Demand for our polyethylene and chemical catalysts drove the increase in sales, with higher volumes more than offsetting lower customer price mix.

Gross Profit

Gross profit for the three months ended September 30, 2021 was $53.6 million, an increase of $12.8 million, or 31.4%, compared with $40.8 million for the thre months ended September 30, 2020. The increase in gross profit was due to higher sales volumes of $5.0 million, favorable customer pricing of $4.8 million, and favorable product mix of $4.2 million, which was partially offset by unfavorable manufacturing and maintenance costs of $1.0 million.

The favorable change in volumes and product mix was a result of increased demand for our high-margin polyethylene catalysts and the impact of our recent Chem32 acquisition. Favorable customer pricing was driven by the pass-through of labor index and energy costs within our regeneration services product group. The increase in manufacturing costs was a result of the timing of plant “turnaround” maintenance projects, which was offset by the pass-through of $15.3 million in higher sulfur costs.

Selling, General and Administrative Expenses

Selling, general and administrative expenses for the three months ended September 30, 2021 were $24.8 million, an increase of $6.1 million compared with $18.7 million for the three months ended September 30, 2020. The increase in selling, general and administrative expenses was due to an increase in compensation-related expenses.

Other Operating Expense, Net

Other operating expense, net was comparable between both periods. Other operating expense, net for the three months ended September 30, 2021 was $6.3 million, an increase of $3.0 million, compared with $3.3 million for the three months ended September 30, 2020. The increase in other operating expense, net, was due to an increase in asset disposals related to plant “turnaround” maintenance projects.

Equity in Net Income of Affiliated Companies

Equity in net income of affiliated companies for the three months ended September 30, 2021 was $8.8 million, compared to $0.1 million for the three months ended September 30, 2020. The increase was primarily due to $8.7 million of higher earnings from the Zeolyst Joint Venture during the three months ended September 30, 2021 as compared to the three months ended September 30, 2020. The increase in earnings from the Zeolyst Joint Venture was due to increased demand for our catalysts used in renewable fuels and the demand recovery for emission control catalysts.

Interest Expense, Net

Interest expense, net for the three months ended September 30, 2021 was $9.0 million, a decrease of $1.4 million, as compared with $10.4 million for the three months ended September 30, 2020. The decrease in interest expense, net was primarily due lower average debt balances and a favorable increase in variable versus fixed-rate debt during the three months ended September 30, 2021 as compared to the three months ended September 30, 2020.

Debt Extinguishment Costs

Debt extinguishment costs for the three months ended September 30, 2021 and 2020 were $15.2 million and $14.0 million, respectively.

Concurrent with, and using a portion of the net cash proceeds from, the divestiture of the Performance Chemicals business in August 2021, we repaid the remaining balance on our 2016 Term Loan Facility and redeemed the Senior Notes. In connection with the redemption of the Senior Notes, we paid a redemption premium of $8.5 million, which was recorded as debt extinguishment costs during the three months ended September 30, 2021. We wrote off $0.8 million of unamortized deferred financing costs and $2.4 million of original issue discount related to the 2016 Term Loan Facility and $2.3 million of unamortized deferred financing costs and $1.2 million of original issue discount related to the Senior Notes as debt extinguishment costs during the three months ended September 30, 2021.

On July 22, 2020, we entered into an agreement for a new senior secured term loan facility in an aggregate principal amount of $650.0 million, the proceeds of which were used to repay the remaining outstanding balance of $625.0 million on the 6.75% Senior Secured Notes due 2022. In conjunction with the issuance of such senior secured term loan facility, we paid $10.6 million in prepayment premiums and recorded $0.1 million of new creditor and third-party financing fees as debt extinguishment costs. In addition, previous unamortized deferred financing costs of $2.1 million and original issue discount of $1.2 million associated with the 6.75% Senior Secured Notes due 2022 were written off as debt extinguishment costs.

Other Income, Net

Other income, net for the three months ended September 30, 2021 was income of $0.2 million, a decrease of $3.9 million, as compared with income of $4.1 million for the three months ended September 30, 2020. The change in other expense, net primarily consisted of a decrease in foreign currency gains related to the non-permanent intercompany debt denominated in local currency and translated to the U.S. dollar.

Provision for Income Taxes

The provision for income taxes for the three months ended September 30, 2021 was $2.6 million compared to a $21.3 million provision for the three ronths ended September 30, 2020. The effective income tax rate for the three months ended September 30, 2021 was 35.6% compared to (1,579.7)% for the three months ended September 30, 2020.

The Company's effective income tax rate fluctuates based primarily on changes in income mix, the impacts of the Global Intangible Low Taxed Income ("GILTI") tax rules, tax rate changes and changes in foreign exchange gains and losses, which create permanent differences in certain jurisdictions.

The difference between the U.S. federal statutory income tax rate and the Company's effective income tax rate for the three months ended September 30, 2021 was mainly due to the tax effect of permanent differences related to foreign currency exchange gain or loss, the inclusion of foreign earnings in U.S. taxable income, the discrete impact of the product line and asset sales, foreign tax rate changes, pre-tax losses with no associated tax benefit and state taxes.

Net (Loss) Income Attributable to Ecovyst

For the foregoing reasons and after the effect of the non-controlling interest in earnings of subsidiaries for each period presented, net loss attributable to Ecovyst was $71.3 million for the three months ended September 30, 2021 compared with net income of $7.5 million for the three months ended September 30, 2020.

Adjusted EBITDA

Summarized Segment Adjusted EBITDA information is shown below in the following table:

	Three months ended September 30,		Change	
	2021	**2020**	**$**	**%**
	(in millions, except percentages)			
Segment Adjusted EBITDA:[1]				
Ecoservices	$ 51.9	$ 44.3	$ 7.6	17.2 %
Catalyst Technologies[2]	25.5	11.8	13.7	116.1 %
Total Segment Adjusted EBITDA[3]	77.4	56.1	21.3	38.0 %
Unallocated corporate expenses	(8.0)	(8.0)	—	— %
Total Adjusted EBITDA	$ 69.4	$ 48.1	$ 21.3	44.3 %

(1) We define Segment Adjusted EBITDA as EBITDA adjusted for certain items as noted in the reconciliation below. Our management evaluates the performance of our segments and allocates resources based primarily on Segment Adjusted EBITDA. Segment Adjusted EBITDA does not represent cash flow for periods presented and should not be considered as an alternative to net income as an indicator of our operating performance or as an alternative to cash flows as a source of liquidity. Segment Adjusted EBITDA may not be comparable with EBITDA or Adjusted EBITDA as defined by other companies.

(2) The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment was $14.5 million for the three months ended September 30, 2021, which includes $8.8 million of equity in net income, excluding $1.6 million of amortization of investment in affiliate step-up plus $4.1 million of joint venture depreciation, amortization and interest. The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment was $5.3 million for the three months ended September 30, 2020, which includes $0.1 million of equity in net income, excluding $1.7 million of amortization of investment in affiliate step-up plus $3.6 million of joint venture depreciation, amortization and interest.

(3) Our total Segment Adjusted EBITDA differs from our total consolidated Adjusted EBITDA due to unallocated corporate expenses.

Ecoservices: Adjusted EBITDA for the three months ended September 30, 2021 was $51.9 million, an increase of $7.6 million, or 17.2%, compared with $44.3 million for the three months ended September 30, 2020. The increase in Adjusted EBITDA was a result of higher regeneration services volumes, favorable virgin sulfuric acid pricing and the impact of our recent Chem32 acquisition.

Catalyst Technologies: Adjusted EBITDA for the three months ended September 30, 2021 was $25.5 million, an increase of $13.7 million, or 116.1%, compared with $11.8 million for the three months ended September 30, 2020. The increase in Adjusted EBITDA was primarily a result of higher demand for our polyethylene and pressure product catalysts and improved manufacturing network efficiencies.

A reconciliation of net income (loss) from continuing operations to Segment Adjusted EBITDA is as follows:

	Three months ended September 30, 2021	Three months ended September 30, 2020
	(in millions)	
Reconciliation of net income (loss) from continuing operations to Segment Adjusted EBITDA		
Net income (loss) from continuing operations	$ 4.7	$ (22.7)
Provision for income taxes	2.6	21.3
Interest expense, net	9.0	10.4
Depreciation and amortization	20.6	19.2
EBITDA	36.9	28.2
Joint venture depreciation, amortization and interest[a]	4.1	3.6
Amortization of investment in affiliate step-up[b]	1.6	1.7
Debt extinguishment costs	15.2	14.0
Net loss on asset disposals[c]	2.2	0.6
Foreign currency exchange loss (gain)[d]	0.9	(4.3)
LIFO benefit[e]	(1.3)	(1.3)
Transaction and other related costs[f]	0.5	0.2
Equity-based compensation	10.2	4.4
Restructuring, integration and business optimization expenses[g]	0.1	0.3
Defined benefit pension benefit[h]	(1.0)	(0.2)
Other[i]	—	0.9
Adjusted EBITDA	69.4	48.1
Unallocated corporate expenses	8.0	8.0
Segment Adjusted EBITDA	$ 77.4	$ 56.1

(a) We use Adjusted EBITDA as a performance measure to evaluate our financial results. Because our Catalyst Technologies segment includes our 50% interest in the Zeolyst Joint Venture, we include an adjustment for our 50% proportionate share of depreciation, amortization and interest expense of the Zeolyst Joint Venture.

(b) Represents the amortization of the fair value adjustments associated with the equity affiliate investment in the Zeolyst Joint Venture as a result of the combination of the businesses of PQ Holdings Inc. and Eco Services Operations LLC in May 2016 (the “Business Combination”). We determined the fair value of the equity affiliate investment and the fair value step-up was then attributed to the underlying assets of the Zeolyst Joint Venture. Amortization is primarily related to the fair value adjustments associated with fixed assets and intangible assets, including customer relationships and technical know-how.

(c) When asset disposals occur, we remove the impact of net gain/loss of the disposed asset because such impact primarily reflects the non-cash write-off of long-lived assets no longer in use.

(d) Reflects the exclusion of the foreign currency transaction gains and losses in the statements of income, which primarily relates to the non-permanent intercompany debt denominated in local currency translated to U.S. dollars.

(e) Represents non-cash adjustments to the Company’s LIFO reserves for certain inventories in the U.S. that are valued using the LIFO method, which we believe provides a means of comparison to other companies that may not use the same basis of accounting for inventories.

(f) Relates to certain transaction costs, including debt financing, due diligence and other costs related to transactions that are completed, pending or abandoned, that we believe are not representative of our ongoing business operations.

(g) Includes the impact of restructuring, integration and business optimization expenses which are incremental costs that are not representative of our ongoing business operations.

(h) Represents adjustments for defined benefit pension plan (benefit) costs in our statements of income. All of our defined benefit pension plan obligations are under defined benefit pension plans that are frozen. As such, we do not view such income or expenses as core to our ongoing business operations.

(i) Other costs consist of certain expenses that are not core to our ongoing business operations, including environmental remediation-related costs, capital and franchise taxes. Included in this line-item are rounding discrepancies that may arise from rounding from dollars (in thousands) to dollars (in millions).

Adjusted Net Income

Summarized adjusted net income (loss) information is shown below in the following table:

	Three months ended September 30,					
	2021			2020		
	Pre-tax	Tax expense (benefit)	After-tax	Pre-tax	Tax expense (benefit)	After-tax
	(in millions)					
Reconciliation of net income (loss) from continuing operations to Adjusted Net Income[(1)(2)]						
Net income (loss) attributable to Ecovyst Inc.	$ 7.3	$ 2.6	$ 4.7	$ (1.4)	$ 21.3	$ (22.7)
Amortization of investment in affiliate step-up[(b)]	1.6	0.5	1.1	1.7	0.6	1.1
Debt extinguishment costs	15.2	4.4	10.8	14.0	5.1	8.9
Net loss on asset disposals[(c)]	2.2	0.5	1.7	0.6	0.4	0.2
Foreign currency exchange loss (gain)[(d)]	0.9	0.2	0.7	(4.3)	(1.6)	(2.7)
LIFO benefit[(e)]	(1.3)	(0.4)	(0.9)	(1.3)	(0.5)	(0.8)
Transaction and other related costs[(f)]	0.5	0.2	0.3	0.2	0.1	0.1
Equity-based compensation	10.2	2.9	7.3	4.4	1.6	2.8
Restructuring, integration and business optimization expenses[(g)]	0.1	0.1	—	0.3	0.1	0.2
Defined benefit pension plan benefit[(h)]	(1.0)	(0.3)	(0.7)	(0.2)	(0.1)	(0.1)
Other[(i)]	—	—	—	0.9	0.1	0.8
Adjusted Net Income, including non-cash GILTI tax	$ 35.7	$ 10.7	$ 25.0	$ 14.9	$ 27.1	$ (12.2)
Intraperiod allocation for restating discontinued operations[(3)]	—	(0.5)	0.5	—	(21.7)	21.7
Adjusted Net Income	$ 35.7	$ 10.2	$ 25.5	$ 14.9	$ 5.4	$ 9.5

(1) We define adjusted net income as net income attributable to Ecovyst adjusted for non-operating income or expense and the impact of certain non-cash or other items that are included in net income that we do not consider indicative of our ongoing operating performance. Adjusted net income is presented as a key performance indicator as we believe it will enhance a prospective investor's understanding of our results of operations and financial condition. Adjusted net income may not be comparable with net income or adjusted net income as defined by other companies.

(2) Refer to the Adjusted EBITDA notes above for more information with respect to each adjustment.

(3) Due to the sale of the Performance Chemicals business, the tax rates used to value deferred tax assets ("DTAs") and deferred tax liabilities ("DTLs") needs to be adjusted. Given it is a direct result of the sale of discontinued operations and the need to adjust the tax rates arose because of discontinued operations, the impact of revaluing the reporting entity's DTAs and DTLs are reflected in continuing operations.

The adjustments to net income attributable to Ecovyst Inc. are shown net of applicable tax rates as determined by the calculation of our quarterly tax provision under interim financial reporting for the three months ended September 30, 2021 and September 30, 2020, except for the foreign currency exchange loss, impacts of tax rate changes and the effects of the sale of assets for which the taxes are calculated as discrete items using the applicable statutory income tax rates.

Results of Operations

Nine months ended September 30, 2021 Compared to the Nine months ended September 30, 2020

Highlights

The following is a summary of our financial performance for the nine months ended September 30, 2021 compared with the nine months ended September 30, 2020.

Sales

- Sales increased $69.2 million to $441.0 million. The increase in sales was primarily due to favorable cost pass-through pricing, a rebound in volumes in our Ecoservices segment and higher demand for our polyethylene catalysts.

Gross Profit

- Gross profit increased $8.8 million to $122.2 million. The increase in gross profit was primarily due to higher sales volumes, favorable cost pass-through pricing and favorable product mix, which was partially offset by an increase in manufacturing costs.

Operating Income

- Operating income decreased by $4.0 million to $36.6 million. The increase in operating income was due to an increase in gross profit, partially offset by increased selling, general and maintenance costs and other operating expenses.

Equity in Net Income of Affiliated Companies

- Equity in net income of affiliated companies for the nine months ended September 30, 2021 was $20.7 million, compared with $19.9 million for the nine months ended September 30, 2020. The increase of $0.8 million was due to an increase in sales volume in the Zeolyst Joint Venture for the nine months ended September 30, 2021.

The following is our unaudited condensed consolidated statements of income and a summary of financial results for the nine months ended September 30, 2021 and 2020:

	Nine months ended September 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Sales	$ 441.0	$ 371.8	$ 69.2	18.6 %
Cost of goods sold	318.8	258.6	60.2	23.3 %
Gross profit	122.2	113.4	8.8	7.8 %
Gross profit margin	*27.7 %*	*30.5 %*		
Selling, general and administrative expenses	68.8	61.5	7.3	11.9 %
Other operating expense, net	16.8	11.3	5.5	48.7 %
Operating income	36.6	40.6	(4.0)	(9.9)%
Operating income margin	*8.3 %*	*10.9 %*		
Equity in net (income) from affiliated companies	(20.7)	(19.9)	(0.8)	4.0 %
Interest expense, net	28.2	40.9	(12.7)	(31.1)%
Debt extinguishment costs	26.9	16.5	10.4	63.0 %
Other expense (income), net	3.1	(0.2)	3.3	NM
Income before income taxes and noncontrolling interest	(0.9)	3.3	(4.2)	(127.3)%
Provision (benefit) for income taxes	5.1	(5.0)	10.1	(202.0)%
Effective tax rate	*(610.9)%*	*(149.9)%*		
Net income from continuing operations	(6.0)	8.3	(14.3)	(172.3)%
Net (loss) income from discontinued operations, net of tax	(159.1)	16.3	(175.4)	NM
Net (loss) income	(165.1)	24.6	(189.7)	(771.1)%
Less: Net income attributable to the noncontrolling interest - discontinued operations	0.3	0.9	(0.6)	(66.7)%
Net (loss) income attributable to Ecovyst Inc.	$ (165.4)	$ 23.7	$ (189.1)	(797.9)%

Sales

	Nine months ended September 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Sales:				
Ecoservices	$ 358.5	$ 298.7	$ 59.8	20.0 %
Catalyst Technologies	82.5	73.1	9.4	12.9 %
Total sales	$ 441.0	$ 371.8	$ 69.2	18.6 %

Ecoservices: Sales in Ecoservices for the nine months ended September 30, 2021 were $358.5 million, an increase of $59.8 million, or 20.0%, compared to sales of $298.7 million for the nine months ended September 30, 2020. The increase in sales was due to higher average selling prices of $40.5 million and an increase in sales volumes of $19.3 million. Higher average selling prices benefited from the pass-through of higher sulfur costs of $27.8 million. Sales volumes increased as result of a rebound in refinery utilization compared to the prior year period that was depressed by the COVID-19 pandemic as well as the impact of our recent Chem32 acquisition.

Catalyst Technologies: Sales in Catalyst Technologies for the nine months ended September 30, 2021 were $82.5 million, an increase of $9.4 million, or 12.9%, compared to sales of $73.1 million for the nine months ended September 30, 2020. The increase in sales was due to an increase in volumes of $10.5 million partially offset by lower average selling prices of $2.7 million. Demand for our polyethylene catalysts drove the increase in sales, with higher volumes more than offsetting lower customer price mix.

Gross Profit

Gross profit for the nine months ended September 30, 2021 was $122.2 million, an increase of $8.8 million, or 7.8%, compared with $113.4 million for the nine moths ended September 30, 2020. The increase in gross profit was due to favorable volumes in Ecoservices of $12.5 million, higher pricing of $10.0 million and favorable product mix in Silica Catalysts of $9.3 million, which was partially offset by higher manufacturing costs of $18.7 million.

The impact of favorable volumes on our gross profit was a result of a rebound in refinery utilization compared to the prior year period that was burdened by the COVID-19 pandemic as well as the impact of our recent Chem32 acquisition. Take or pay provisions within our contracts drove a favorable pricing benefit. The favorable product mix in Silica Catalysts was due to increased demand for our higher-margin polyethylene catalysts. One-time repair costs related to winter storms in the Gulf region, timing of plant "turnaround" maintenance expenditures and higher inventory absorption costs drove the unfavorable change in manufacturing costs.

Selling, General and Administrative Expenses

Selling, general and administrative expenses for the nine months ended September 30, 2021 was $68.8 million, an increase of $7.3 million as compred to $61.5 million for the nine months ended September 30, 2020. The increase in selling, general and administrative expenses was due to increased compensation-related expenses, partially offset by income generated from the transition service agreement entered into as part of the sale of the Performance Materials business.

Other Operating Expense, Net

Other operating expense, net for the nine months ended September 30, 2021 was $16.8 million, an increase of $5.5 million, compared with $11.3 million for the nine months ended September 30, 2020. The increase in other operating expense, net was a result of asset disposals related to plant "turnaround" maintenance projects and severance charges incurred in the current year period.

Equity in Net Income of Affiliated Companies

Equity in net income of affiliated companies for the nine months ended September 30, 2021 was $20.7 million, compared to $19.9 million for the nine months ended September 30, 2020. The increase was primarily due to $0.9 million of lower earnings from the Zeolyst Joint Venture during the nine months ended September 30, 2021.

Interest Expense, Net

Interest expense, net for the nine months ended September 30, 2021 was $28.2 million, a decrease of $12.7 million, as compared with $40.9 million for the nine months ended September 30, 2020. The decrease in interest expense was primarily due to lower interest rates on our variable-rate debt and lower average debt balances.

Debt Extinguishment Costs

Debt extinguishment costs were $26.9 million and $16.5 million for the nine months ended September 30, 2021 and 2020, respectively.

Concurrent with, and using a portion of the net cash proceeds from, the divestiture of the Performance Chemicals business in August 2021, we repaid the remaining balance on our 2016 Term Loan Facility and redeemed the Senior Notes. In connection with the redemption of the Senior Notes, we paid a redemption premium of $8.5 million, which was recorded as debt extinguishment costs during the nine months ended September 30, 2021. We wrote off $0.8 million of unamortized deferred financing costs and $2.4 million of original issue discount related to the 2016 Term Loan Facility and $2.3 million of unamortized deferred financing costs and $1.2 million of original issue discount related to the Senior Notes as debt extinguishment costs during the nine months ended September 30, 2021.

In June 2021, we entered into an agreement for a new senior secured term loan facility and used the proceeds to repay a portion of our existing term loan facilities. As a result of this transaction, we recorded $5.7 million of new creditor and third-party financing costs as debt extinguishment costs during the three months ended September 30, 2021. In addition, previous unamortized deferred financing costs of $1.7 million and original issue discount of $3.7 million associated with the previously outstanding debt were written off as debt extinguishment costs.

In June 2021, we amended our ABL Credit Agreement to decrease the aggregate amount of revolving loan commitments and extend the maturity date. As a result of the amendment, we wrote off $0.5 million of unamortized deferred financing costs as debt extinguishment costs.

On July 22, 2020, we entered into an agreement for a new senior secured term loan facility in an aggregate principal amount of $650.0 million, the proceeds of which were used to repay the remaining outstanding balance of $625.0 million on the 6.75% Senior Secured Notes due 2022. In conjunction with the issuance of such senior secured term loan facility, we paid $10.6 million in prepayment premiums and recorded $0.1 million of new creditor and third-party financing fees as debt extinguishment costs. In addition, previous unamortized deferred financing costs of $2.1 million and original issue discount of $1.2 million associated with the 6.75% Senior Secured Notes due 2022 were written off as debt extinguishment costs.

On February 7, 2020, we amended our existing senior secured term loan facility to reduce the applicable interest rates and extend the maturity of the facility to February 2027. We recorded $2.2 million of new creditor and third-party financing fees as debt extinguishment costs for the nine months ended September 30, 2020. In addition, previously unamortized deferred financing costs of $0.1 million and original issue discount of $0.2 million associated with the existing senior secured term loan facility were written off as debt extinguishment costs for the nine months ended September 30, 2020.

Other Expense (Income), Net

Other (income) expense, net for the nine months ended September 30, 2021 was expense of $3.1 million, a decrease of $3.3 million, as compared with income of $0.2 million for the nine months ended September 30, 2020. The decrease in other (income) expense, net primarily consisted of foreign currency losses in the current year as compared to gains in the prior year related to the non-permanent intercompany debt denominated in local currency and translated to the U.S. dollar.

Provision (Benefit) for Income Taxes

The benefit for income taxes for the nine months ended September 30, 2021 was $5.1 million compared to a $5.0 million benefit for the nine months ended September 30, 2020. The effective income tax rate for the nine months ended September 30, 2021 was (610.9)% compared to (149.9)% for the nine months ended September 30, 2020.

The Company's effective income tax rate fluctuates primarily due to income mix, the impacts of GILTI, discrete impacts of the divestiture of the Performance Chemicals business, tax rate changes and changes in foreign exchange gains and losses, which create permanent differences in certain jurisdictions.

The difference between the U.S. federal statutory income tax rate and the Company's effective income tax rate for the nine months ended September 30, 2021 was mainly due to the impacts of GILTI, discrete tax impacts related to intraperiod allocation revaluation of deferred tax assets and liabilities as a result of the divestiture of the Performance Chemicals business, tax rate changes and the tax effect of permanent differences related to foreign currency exchange gain or loss.

Net (Loss) Income Attributable to Ecovyst

For the foregoing reasons and after the effect of the non-controlling interest in earnings of subsidiaries for each period presented, net loss attributable to Ecovyst was $165.4 million for the nine months ended September 30, 2021 compared with net income of $23.7 million for the nine months ended September 30, 2020.

Adjusted EBITDA

Summarized Segment Adjusted EBITDA information is shown below in the following table:

	Nine months ended September 30,		Change	
	2021	2020	$	%
	(in millions, except percentages)			
Segment Adjusted EBITDA:[1]				
Ecoservices	$ 125.4	$ 116.5	$ 8.9	7.6 %
Catalyst Technologies[2]	64.6	59.7	4.9	8.2 %
Total Segment Adjusted EBITDA[3]	190.0	176.2	13.8	7.8 %
Unallocated corporate expenses	(25.6)	(29.5)	3.9	13.2 %
Total Adjusted EBITDA	$ 164.4	$ 146.7	$ 17.7	12.1 %

(1) We define Segment Adjusted EBITDA as EBITDA adjusted for certain items as noted in the reconciliation below. Our management evaluates the performance of our segments and allocates resources based primarily on Segment Adjusted EBITDA. Segment Adjusted EBITDA does not represent cash flow for periods presented and should not be considered as an alternative to net income as an indicator of our operating performance or as an alternative to cash flows as a source of liquidity. Segment Adjusted EBITDA may not be comparable with EBITDA or Adjusted EBITDA as defined by other companies.

(2) The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $37.1 million for the nine months ended September 30, 2021, which includes $20.8 million of equity in net income, excluding $4.9 million of amortization of investment in affiliate step-up plus $11.4 million of joint venture depreciation, amortization and interest. The Adjusted EBITDA from the Zeolyst Joint Venture included in the Catalyst Technologies segment is $35.9 million for the nine months ended September 30, 2020, which includes $19.9 million of equity in net income, excluding $5.0 million of amortization of investment in affiliate step-up plus $11.1 million of joint venture depreciation, amortization and interest.

(3) Our total Segment Adjusted EBITDA differs from our total consolidated Adjusted EBITDA due to unallocated corporate expenses. Rounding discrepancies may arise when rounding segment results from dollars (in thousands) to dollars (in millions).

Ecoservices: Adjusted EBITDA for the nine months ended September 30, 2021 was $125.4 million, an increase of $8.9 million, or 7.6%, compared with $116.5 million for the nine months ended September 30, 2020. The increase in Adjusted EBITDA was due to a rebound in sales volumes partially offset by higher repair costs to our facilities and lost sales related to winter storm Uri.

Catalyst Technologies: Adjusted EBITDA for the nine months ended September 30, 2021 was $64.6 million, an increase of $4.9 million, or 8.2%, compared with $59.7 million for the nine months ended September 30, 2020. The increase in Adjusted EBITDA was a result of higher demand for polyethylene catalyst and catalyst used for renewable fuels as well as favorable inventory absorption to match anticipated future demand partially offset by lower hydrocracking and specialty catalyst sales volumes.

A reconciliation of net income from continuing operations to Segment Adjusted EBITDA is as follows:

	Nine months ended September 30,	
	2021	2020
	(in millions)	
Reconciliation of net income from continuing operations to Segment Adjusted EBITDA		
Net income from continuing operations	$ (6.0)	$ 8.3
Provision (benefit) for income taxes	5.1	(5.0)
Interest expense, net	28.2	40.9
Depreciation and amortization	60.1	56.5
EBITDA	87.4	100.7
Joint venture depreciation, amortization and interest[a]	11.4	11.1
Amortization of investment in affiliate step-up[b]	4.9	5.0
Debt extinguishment costs	26.9	16.5
Net loss on asset disposals[c]	4.5	1.2
Foreign currency exchange loss (gain)[d]	4.8	(0.6)
LIFO benefit[e]	(2.0)	(4.9)
Transaction and other related costs[f]	1.6	1.4
Equity-based compensation	22.8	13.3
Restructuring, integration and business optimization expenses[g]	2.4	1.4
Defined benefit pension plan benefit[h]	(2.2)	(0.5)
Other[i]	1.9	2.1
Adjusted EBITDA	164.4	146.7
Unallocated corporate expenses	25.6	29.5
Segment Adjusted EBITDA	$ 190.0	$ 176.2

(a) We use Adjusted EBITDA as a performance measure to evaluate our financial results. Because our Catalyst Technologies segment includes our 50% interest in the Zeolyst Joint Venture, we include an adjustment for our 50% proportionate share of depreciation, amortization and interest expense of the Zeolyst Joint Venture.

(b) Represents the amortization of the fair value adjustments associated with the equity affiliate investment in the Zeolyst Joint Venture as a result of the combination of the businesses of PQ Holdings Inc. and Eco Services Operations LLC in May 2016. We determined the fair value of the equity affiliate investment and the fair value step-up was then attributed to the underlying assets of the Zeolyst Joint Venture. Amortization is primarily related to the fair value adjustments associated with fixed assets and intangible assets, including customer relationships and technical know-how.

(c) When asset disposals occur, we remove the impact of net gain/loss of the disposed asset because such impact primarily reflects the non-cash write-off of long-lived assets no longer in use.

(d) Reflects the exclusion of the foreign currency transaction gains and losses in the statements of income, primarily related to the non-permanent intercompany debt denominated in local currency translated to U.S. dollars.

(e) Represents non-cash adjustments to the Company's LIFO reserves for certain inventories in the U.S. that are valued using the LIFO method, which we believe provides a means of comparison to other companies that may not use the same basis of accounting for inventories.

(f) Relates to certain transaction costs, including debt financing, due diligence and other costs related to transactions that are completed, pending or abandoned, that we believe are not representative of our ongoing business operations.

(g) Includes the impact of restructuring, integration and business optimization expenses which are incremental costs that are not representative of our ongoing business operations.

(h) Represents adjustments for defined benefit pension plan (benefit) costs in our statements of income. All of our defined benefit pension plan obligations are under defined benefit pension plans that are frozen. As such, we do not view such income or expenses as core to our ongoing business operations.

(i) Other costs consist of certain expenses that are not core to our ongoing business operations, including environmental remediation-related costs, capital and franchise taxes. Included in this line-item are rounding discrepancies that may arise from rounding from dollars (in thousands) to dollars (in millions).

Adjusted Net Income

Summarized adjusted net income information is shown below in the following table:

	Nine months ended September 30,					
	2021			2020		
	Pre-tax	Tax expense (benefit)	After-tax	Pre-tax	Tax expense (benefit)	After-tax
	(in millions)					
Reconciliation of net income from continuing operations to Adjusted Net Income[1][2]						
Net income attributable to Ecovyst Inc.	$ (0.9)	$ 5.1	$ (6.0)	$ 3.3	$ (5.0)	$ 8.3
Amortization of investment in affiliate step-up[b]	4.9	1.4	3.5	5.0	1.8	3.2
Debt extinguishment costs	26.9	7.5	19.4	16.5	6.0	10.5
Net loss on asset disposals[c]	4.5	1.2	3.3	1.2	0.5	0.7
Foreign currency exchange losses (gains)[d]	4.8	1.3	3.5	(0.6)	(0.2)	(0.4)
LIFO benefit[e]	(2.0)	(0.6)	(1.4)	(4.9)	(1.8)	(3.1)
Transaction and other related costs[f]	1.6	0.5	1.1	1.4	0.5	0.9
Equity-based compensation	22.8	6.4	16.4	13.3	4.8	8.5
Restructuring, integration and business optimization expenses[g]	2.4	0.7	1.7	1.4	0.5	0.9
Defined benefit pension plan benefit[h]	(2.2)	(0.6)	(1.6)	(0.5)	(0.2)	(0.3)
Other[i]	1.9	0.6	1.3	2.1	0.7	1.4
Adjusted Net Income, including Intraperiod allocation	$ 64.7	$ 23.5	$ 41.2	$ 38.2	$ 7.6	$ 30.6
Intraperiod allocation for restating discontinued operations[3]	—	(5.3)	5.3	—	6.1	(6.1)
Adjusted Net Income	$ 64.7	$ 18.2	$ 46.5	$ 38.2	$ 13.7	$ 24.5

(1) We define adjusted net income as net income attributable to Ecovyst adjusted for non-operating income or expense and the impact of certain non-cash or other items that are included in net income that we do not consider indicative of our ongoing operating performance. Adjusted net income is presented as a key performance indicator as we believe it will enhance a prospective investor's understanding of our results of operations and financial condition. Adjusted net income may not be comparable with net income or adjusted net income as defined by other companies.

(2) Refer to the Adjusted EBITDA notes above for more information with respect to each adjustment.

(3) Due to the sale of the Performance Chemicals business, the tax rates used to value deferred tax assets ("DTAs") and deferred tax liabilities ("DTLs") needs to be adjusted. Given it is a direct result of the sale of discontinued operations and the need to adjust the tax rates arose because of discontinued operations, the impact of revaluing the reporting entity's DTAs and DTLs are reflected in continuing operations.

The adjustments to net income attributable to Ecovyst Inc. are shown net of applicable tax rates of 28.0% and 36.3% for the nine months ended September 30, 2021 and 2020, respectively, except for the foreign currency exchange loss and discrete impacts of the divestiture of the Performance Chemicals business.

Financial Condition, Liquidity and Capital Resources

Our primary sources of liquidity consist of cash flows from operations, existing cash balances as well as funds available under our asset based lending revolving credit facility. We expect that ongoing requirements for debt service and capital expenditures will be funded from these sources of funds. Our primary liquidity requirements include funding working capital requirements (primarily inventory and accounts receivable, net of accounts payable and other accrued liabilities), debt service requirements and capital expenditures. Our capital expenditures include both maintenance of business, which include spending on maintenance and health, safety and environmental initiatives as well as growth, which includes spending to drive organic sales growth and cost savings initiatives.

We believe that our existing cash, cash equivalents and cash flows from operations, combined with availability under our asset based lending revolving credit facility, will be sufficient to meet our presently anticipated future cash needs for at least the next twelve months. We may also pursue strategic acquisition or divestiture opportunities, which may impact our future cash requirements. We may, from time to time, increase borrowings under our asset based lending revolving credit facility to meet our future cash needs. As of September 30, 2021, we had cash and cash equivalents of $104.8 million and availability of $60.8 million under our asset based lending revolving credit facility, after giving effect to $17.5 million of outstanding letters of credit, for a total available liquidity of $165.6 million. We did not have any revolving credit facility borrowings as of September 30, 2021. As of September 30, 2021, we were in compliance with all covenants under our debt agreements.

We held an immaterial balance of cash and cash equivalents in foreign jurisdictions as of September 30, 2021. We continue to repatriate cash held outside of the United States from certain foreign subsidiaries in order to meet domestic liquidity needs. Depending on domestic and foreign cash balances, we have certain flexibility to repatriate funds in order to meet those needs. Specifically, we have an intercompany loan structure in place with foreign subsidiaries that allows us to repatriate foreign cash in a tax efficient manner from those subsidiaries. Repatriation of foreign cash is generally not subject to U.S. federal income taxes at the time of cash distribution. However, foreign earnings may still be taxed for state income tax purposes, as well as subject to certain foreign withholding tax obligations, when cash amounts are distributed back to the U.S.

Our liquidity requirements are significant, primarily due to debt service requirements. As reported, our cash interest paid for the nine months ended September 30, 2021 and 2020 was approximately $43.1 million and $75.3 million, respectively. Before any impact of hedges, a one percent change in assumed interest rates for our variable interest credit facilities would have an annual impact of approximately $9.0 million on interest expense. We hedge the interest rate fluctuations on debt obligations through interest rate cap agreements. As of September 30, 2021, we had interest rate caps on $500.0 million of notional variable-rate debt with a cap rate of 0.84% through July 2022 and $400.0 million of notional variable-rate debt with a cap rate of 1.00% through August 2023.

Cash Flow

	Nine months ended September 30, 2021	Nine months ended September 30, 2020
	(in millions)	
Continuing Operations		
Net cash provided by (used in):		
Operating activities	$ 92.3	$ 56.4
Investing activities	892.9	(32.2)
Financing activities	(963.5)	(9.8)
Discontinued Operations		
Net cash provided by (used in):		
Operating activities	(7.4)	94.2
Investing activities	(40.9)	(9.9)
Financing activities	(1.1)	(0.5)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4.7)	(6.0)
Net change in cash, cash equivalents and restricted cash	(32.4)	92.2
Cash, cash equivalents and restricted cash at beginning of period	137.2	73.9
Cash, cash equivalents and restricted cash at end of period	104.8	166.1
Less: cash, cash equivalents and restricted cash of discontinued operations	—	(41.8)
Cash, cash equivalents and restricted cash at end of period of continuing operations	$ 104.8	$ 124.5

	Nine months ended September 30, 2021	Nine months ended September 30, 2020
	(in millions)	
Continuing Operations		
Net income	$ (6.0)	$ 8.3
Non-cash and non-working capital related activities[(1)]	110.0	84.3
Changes in working capital	(18.5)	(33.7)
Other operating activities	6.8	(2.5)
Net cash provided by operating activities, continuing operations	$ 92.3	$ 56.4

[(1)] Includes depreciation, amortization, amortization of deferred financing costs and original issue discount, foreign currency exchange gains and losses, deferred income tax provision (benefit), net (gains) losses on asset disposals, stock compensation expense and equity in net income and dividends received from affiliated companies.

	Nine months ended September 30, 2021	Nine months ended September 30, 2020
	(in millions)	
Continuing Operations		
Working capital changes that provided (used) cash:		
Receivables	$ (33.8)	$ 1.7
Inventories	6.1	(4.9)
Prepaids and other current assets	(8.4)	(1.7)
Accounts payable	10.1	0.4
Accrued liabilities	7.5	(29.2)
	$ (18.5)	$ (33.7)

	Nine months ended September 30,	
	2021	2020
	(in millions)	
Continuing Operations		
Purchases of property, plant and equipment	$ (44.6)	$ (34.6)
Proceeds from business divestiture, net of cash	980.4	—
Business combinations, net of cash acquired	(42.8)	—
Proceeds from sale of assets	—	2.4
Other, net	(0.1)	—
Net cash provided by (used in) investing activities, continuing operations	$ 892.9	$ (32.2)

	Nine months ended September 30,	
	2021	2020
	(in millions)	
Continuing Operations		
Net revolving credit facilities borrowings	$ —	$ —
Net cash borrowings (repayments) on debt obligations	(532.1)	(5.9)
Proceeds from failed sale-leaseback	14.1	—
Dividends paid to stockholders	(435.6)	—
Other financing activities	(9.9)	(3.9)
Net cash used in financing activities, continuing operations	$ (963.5)	$ (9.8)

The following discussions related to our cash flows are presented on a continuing operations basis, which excludes the cash flows from our Performance Materials and Performance Chemicals businesses accounted for as discontinued operations.

Net cash provided by operating activities was $92.3 million for the nine months ended September 30, 2021, compared to $56.4 million provided for the nine months ended September 30, 2020. Cash generated by operating activities, other than changes in working capital, was higher during the nine months ended September 30, 2021 by $20.7 million compared to the same period in the prior year. The change in working capital during the nine months ended September 30, 2021 was favorable compared to the nine months ended September 30, 2020. Cash used to fund working capital was $18.5 million and $33.7 million for the nine months ended September 30, 2021 and 2020, respectively.

The increase in cash generated by operating activities, other than changes in working capital, was higher by $20.7 million as compared to the prior year period primarily due to an increase in operating profit and an increase in dividends received from affiliated companies.

The increase in cash from working capital of $15.2 million as compared to the prior year was primarily due to unfavorable changes in accounts receivable and prepaid and other current assets, which were partially offset by favorable changes in inventories, accounts payable and accrued liabilities.

The unfavorable change in accounts receivable was driven by the increase in sales volumes and higher pass-through pricing within our Ecoservices segment and the timing of sales within our Catalysts segment. The unfavorable change in prepaid and other current assets relates to the timing of receivables from related parties and the timing of insurance prepayments. The increase in cash provided by inventory was due to the increase in sales within our Catalysts segment in the current year period. The favorable change in accounts payable is due to the timing of vendor payments as well as capital spending. The favorable change in accrued liabilities relates to changes in various accruals.

Net cash provided by investing activities was $892.9 million for the nine months ended September 30, 2021, compared to cash used of $32.2 million during the same period in 2020. Cash used in investing activities consisted of utilizing $44.6 million and $34.6 million to fund capital expenditures during the nine months ended September 30, 2021 and 2020, respectively. During the nine months ended September 30, 2021, we divested our Performance Chemicals business and received $980.4 million in net proceeds and acquired Chem32, LLC for $42.8 million. We received proceeds of $2.4 million related to the sale of non-core assets during the nine months ended September 30, 2020.

Net cash used in financing activities was $963.5 million for the nine months ended September 30, 2021, compared to net cash used of $9.8 million during the same period in 2020. During the nine months ended September 30, 2021, we used the proceeds from the divestiture of the Performance Chemicals business to repay approximately $526.4 million of outstanding debt, pay a special dividend of $435.6 million and pay a redemption premium on our debt of $8.5 million. Net cash used in financing activities was primarily driven by $10.6 million of debt prepayment charges and $4.1 million of stock repurchases, which was partially offset by $4.7 million of net debt borrowings for the nine months ended September 30, 2020.

Debt

	September 30, 2021	December 31, 2020
	(in millions)	
Senior Secured Term Loan Facility due February 2027 (the “2016 Term Loan Facility”)[1]	$ —	$ 671.7
Senior Secured Term Loan Facility due February 2027 (the “2020 Term Loan Facility”)	—	459.7
Senior Secured Term Loan Facility due June 2028 (the “2021 Term Loan Facility”)	897.8	—
5.750% Senior Notes due 2025 (the “Senior Notes”)[1]	—	295.0
ABL Facility	—	—
Total debt	897.8	1,426.4
Original issue discount	(9.1)	(15.6)
Deferred financing costs	(5.1)	(10.4)
Total debt, net of original issue discount and deferred financing costs	883.6	1,400.4
Less: current portion	(9.0)	—
Total long-term debt, excluding current portion	$ 874.6	$ 1,400.4

(1) A portion of the net cash proceeds from the closing of the sale of the Performance Chemicals business was used to repay the 2016 Term Loan Facility in full and to redeem all of the Senior Notes.

As of September 30, 2021, our total debt was $897.8 million, excluding the original issue discount of $9.1 million and deferred financing fees of $5.1 million for our senior secured credit facilities and notes. Our net debt as of September 30, 2021 was $793.0 million, including cash and cash equivalents of $104.8 million. We may seek, subject to market conditions and other factors, opportunities to repurchase, refinance or otherwise reprice our debt.

In June 2021, PQ Corporation (“PQ Corp”), an indirect, wholly owned subsidiary of Ecovyst prior to the closing of the sale of the Performance Chemicals business, and Ecovyst Catalyst Technologies LLC (“Ecovyst LLC” and, following the closing of the sale of the Performance Chemicals business, the “Borrower”), an indirect, wholly owned subsidiary entered into an agreement for a new senior secured term loan facility in an aggregate principal amount of $900.0 million with an original issue discount of 0.25% and interest at a floating rate of LIBOR (with a 0.5% minimum LIBOR floor) plus 2.75% per annum (or, depending on the Borrower’s first lien net leverage ratio, 2.5%). The proceeds were used to pay in full the 2020 Term Loan Facility, partially pay the 2016 Term Loan Facility and pay the associated fees and expenses. The new senior secured term loan facility requires scheduled quarterly amortization payments, each equal to 0.25% of the original principal amount of the loans under the new senior secured term loan facility.

In June 2021, PQ Corp also entered into a third amendment agreement (the “ABL Amendment”), which amended the ABL Credit Agreement, dated as of May 4, 2016 (the “ABL Credit Agreement” and, as amended by the ABL Amendment, the “Amended ABL Credit Agreement”). The ABL Amendment amended the ABL Credit Agreement to, among other things, following the closing of the sale of the Performance Chemicals business, decrease the aggregate amount of revolving loan commitments available to the borrowers thereunder by an aggregate amount of $150.0 million to $100.0 million, consisting of $90.0 million in U.S. commitments and $10.0 million on in European commitments and extended the maturity date with respect to borrowings under the Amended ABL Credit Agreement to August 2, 2026.

Capital Expenditures

Maintenance capital expenditures include spending on maintenance of business, health, safety and environmental initiatives. Growth capital expenditures include spending to drive organic sales growth and cost savings initiatives. These capital expenditures represent our "book" capital expenditures for which the company has recorded, but not necessarily paid for the capital expenditures.

	Nine months ended September 30,	
	2021	2020
	(in millions)	
Maintenance capital expenditures	$ 29.3	$ 21.3
Growth capital expenditures	8.8	6.6
Total capital expenditures	$ 38.1	$ 27.9

Capital expenditures remained at a level sufficient for required maintenance and certain expansion growth initiatives during these periods. Maintenance capital expenditures were higher in the nine months ended September 30, 2021 as compared to the nine months ended September 30, 2020 due to higher plant maintenance costs and spending on health and safety. Growth capital expenditures were in-line in the nine months ended September 30, 2021 as compared to the nine months ended September 30, 2020.

Pension Funding

We did not pay any cash contributions into our defined benefit plans and other postretirement plans during the nine months ended September 30, 2021. We paid $3.3 million in cash contributions into our defined benefit pension plans and other post-retirement plans during the nine months ended September 30, 2020. The net periodic pension expense was $1.8 million and $0.3 million for the nine months ended September 30, 2020, respectively.

Off–Balance Sheet Arrangements

We had $17.5 million of outstanding letters of credit on our ABL Facility as of September 30, 2021.

Contractual Obligations

Information related to our contractual obligations at December 31, 2020 can be found in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our Annual Report on Form 10-K for the year ended December 31, 2020, filed with the SEC on March 17, 2021, which we refer to as our Annual Report on Form 10-K. During the nine months ended September 30, 2021, there have been no significant changes to our contractual obligations as disclosed in our Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

We prepare our condensed consolidated financial statements in conformity with GAAP and our significant accounting policies are described in Note 2 to our audited consolidated financial statements included in our Annual Report on Form 10-K. The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions that affect reported amounts and related disclosures. We base our estimates and judgments on historical experience and other relevant factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We evaluate our critical accounting estimates, assumptions and judgments on an ongoing basis.

There has been no material change in our critical accounting policies and use of estimates from those described in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," included in our Annual Report on Form 10-K.

Accounting Standards Not Yet Adopted

See Note 2 to our unaudited condensed consolidated financial statements for a discussion of recently issued accounting standards and their effect on us.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Our major market risk exposure is potential losses arising from changing rates and prices regarding foreign currency exchange rate risk, interest rate risk, commodity price risk and credit risk. The audit committee of our board of directors regularly reviews foreign exchange, interest rate and commodity hedging activity and monitors compliance with our hedging policy. We do not use financial instruments for speculative purposes, and we limit our hedging activity to the underlying economic exposure.

There have been no material changes in the foreign exchange risk, interest rate risk, commodity risk or credit risk discussed in Item 7A., "Quantitative and Qualitative Disclosures about Market Risk," included in our Annual Report on Form 10-K. other than the following item:

Foreign Exchange Risk

In March 2021, as a result of the divestitures of the Performance Materials and Performance Chemicals businesses, we settled our cross-currency swaps. At the date of settlement, the total notional value of the cross-currency swaps was $311.4 million. We paid $13.2 million in cash to settle the swaps, which is included in net cash used in investing activities, discontinued operations in our condensed consolidated statement of cash flows for the nine months ended September 30, 2021, as the underlying subsidiary subject to the net investment hedging relationship is part of the Performance Chemicals business.

ITEM 4. CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of September 30, 2021, the end of the period covered by this Quarterly Report on Form 10-Q.

The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at a reasonable assurance level.

Changes in Internal Control Over Financial Reporting

No changes in our internal control over financial reporting occurred during the quarter ended September 30, 2021 that materially affected, or which are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS.

From time to time we may be subject to various legal claims and proceedings incidental to the normal conduct of business, relating to such matters as personal injury, product liability and warranty claims, waste disposal practices, release of chemicals into the environment and other matters that may arise in the ordinary course of our business. We currently believe that there is no litigation pending that is likely to have a material adverse effect on our business. Regardless of the outcome, legal proceedings can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

ITEM 1A. RISK FACTORS.

"Item 1A, Risk Factors" in our Annual Report on Form 10-K includes a discussion of our risk factors. There have been no material changes from the risk factors described in our Annual Report on Form 10-K.

ITEM 5. OTHER INFORMATION.

The following disclosure is provided in accordance with and in satisfaction of the requirements of Item 5.03 '*Amendments to Articl*es of Incorporated or Bylaws; Change in Fiscal Year" of Form 8-K.

On November 8, 2021, the Company filed the following instrument with the Secretary of State of the State of Delaware:

- A Certificate of Correction of Certificate of Amendment of Certificate of Incorporation (the "Certificate of Correction"), which corrected a scrivener error in the Certificate of Amendment of Certificate of Incorporation previously filed with the Secretary of State of the State of Delaware on August 2, 2021 in connection with the Company's name change from "PQ Group Holdings Inc." to "Ecovyst Inc." (the "Name Change"). In accordance with the General Corporation Law of the State of Delaware (the "DGCL"), the board of directors of the Company approved the Name Change, and pursuant to Section 242 of the DGCL, stockholder approval was not required for the Name Change.

The foregoing summary description of the Certificate of Correction is qualified in its entirety by reference to the full text of the Certificate of Correction, which is filed as Exhibit 3.3 hereto, and is incorporated herein by reference.

ITEM 6. EXHIBITS.

The following exhibits are being filed or furnished as part of this Quarterly Report on Form 10-Q:

Exhibit No.	Description
2.1	Amendment No. 1 to Stock Purchase Agreement, dated as of June 24, 2021, by and among PQ Group Holdings Inc. and Sparta Aggregator L. P. (incorporated by reference to Exhibit 2.1 to the Company's Form 8-K, filed on June 30, 2021).
2.2	Amendment No. 2 to Stock Purchase Agreement, dated as of July 12, 2021, by and among PQ Group Holdings Inc. and Sparta Aggregator L. P. (incorporated by reference to Exhibit 2.1 to the Company's Form 8-K, filed on July 15, 2021).
3.1	Second Restated Certificate of Incorporation of PQ Group Holdings Inc. (incorporated by reference to Exhibit 3.1 to the Company's Form 10-Q, filed on November 14, 2017)
3.2	Certificate of Amendment of Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Company's Form 8-K, filed on August 3, 2021)
3.3	Certificate of Correction of Certificate of Amendment of Certificate of Incorporation
3.4	Bylaws of Ecovyst Inc. (incorporated by reference to Exhibit 3.2 to the Company's Form 8-K, filed on August 3, 2021)
31.1	Certification of Chief Executive Officer of Ecovyst Inc. pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer of Ecovyst Inc. pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1	Certification of Chief Executive Officer of Ecovyst Inc. 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 of Ecovyst Inc. pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	The following materials from the Quarterly Report on Form 10-Q of Ecovyst Inc. for the quarter ended September 30, 2021, formatted in Inline XBRL: (i) Condensed Consolidated Statements of Income, (ii) Condensed Consolidated Statements of Comprehensive Income, (iii) Condensed Consolidated Balance Sheets, (iv) Condensed Consolidated Statements of Stockholders' Equity, (v) Condensed Consolidated Statements of Cash Flows, (vi) Notes to Condensed Consolidated Financial Statements and (vii) document and entity information, tagged as blocks of text and including detailed tags
104	The cover page from the Quarterly Report on Form 10-Q of Ecovyst Inc. for the quarter ended September 30, 2021, formatted in Inline XBRL and included as Exhibit 101

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 thereunto duly authorized.

Ecovyst Inc.

Date: November 9, 2021	By:	/s/ MICHAEL FEEHAN
		Michael Feehan
		Vice President and Chief Financial Officer
		(Duly Authorized Officer and Principal Financial and Accounting Officer)

Exhibit 3.3

STATE OF DELAWARE
CERTIFICATE OF CORRECTION

Ecovyst Inc. , a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware.

DOES HEREBY CERTIFY:

1. The name of the corporation is Ecovyst Inc. .
2. That a Certificate of Amendment of Certificate of Incorporation
   (Title of Certificate Being Corrected)
   was filed by the Secretary of State of Delaware on August 2, 2021 and that said Certificate requires correction as permitted by Section 103 of the General Corporation Law of the State of Delaware.
3. The inaccuracy or defect of said Certificate is: (must be specific)

A scrivener error occurred, stating that a special meeting of the stockholders of said corporation was duly called and held upon notice in accordance with Section 222 of the General Corporation Law of the State of Delaware at which meeting the necessary number of shares as required by statute were voted in favor of the amendment. No such meeting was held nor required.

4. Article two of the Certificate is corrected to read as follows:

That pursuant to Section 242 of the General Corporation Law of the State of Delaware, no meeting or vote of stockholders of said corporation is necessary to approve the amendment.

IN WITNESS WHEREOF, said corporation has caused this Certificate of Correction this 8th day of November , A.D. 2021 .

By: /s/Joseph S. Koscinksi
Authorized Officer

Name: Joseph S. Koscinski
Print or Type

Title: Vice President, Secretary, and General Counsel

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, Belgacem Chariag, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Ecovyst 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 9, 2021

/s/ BELGACEM CHARIAG
Belgacem Chariag
Chairman of the Board, President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, Michael Feehan, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Ecovyst 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 9, 2021

/s/ MICHAEL FEEHAN

Michael Feehan
Vice President and Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the quarterly report of Ecovyst Inc. (the “Company”) on Form 10-Q for the quarterly period ended September 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Belgacem Chariag, Chairman of the Board, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; 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 9, 2021	/s/ BELGACEM CHARIAG
	Belgacem Chariag
	Chairman of the Board, President and Chief Executive Officer
	(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the quarterly report of Ecovyst Inc. (the “Company”) on Form 10-Q for the quarterly period ended September 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Michael Feehan, Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; 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 9, 2021

/s/ MICHAEL FEEHAN

Michael Feehan
Vice President and Chief Financial Officer
(Principal Financial Officer)