

United States
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

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

For the quarterly period ended March 31, 2023
or

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

For the transition period from to
Commission File Number: 001-37822

Advanced Emissions Solutions, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

27-5472457
(I.R.S. Employer
Identification No.)

8051 E. Maplewood Ave, Suite 210, Greenwood Village, CO
(Address of principal executive offices)

80111
(Zip Code)

(720) 598-3500
(Registrant's telephone number, including area code)

Not Applicable
(Former name, former address and former fiscal year, if changed since last report)

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 and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit 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	<input type="checkbox"/>	Accelerated filer	<input checked="" type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

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

Class	Trading Symbol	Name of each exchange on which registered
Common stock, par value \$0.001 per share	ADES	Nasdaq Global Market

As of May 2, 2023, there were 27,228,984 outstanding shares of Advanced Emissions Solutions, Inc. common stock, par value \$0.001 per share.

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Part I. – FINANCIAL INFORMATION

Item 1. Consolidated Financial Statements

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets
(Unaudited)

<i>(in thousands, except share data)</i>	As of	
	March 31, 2023	December 31, 2022
ASSETS		
Current assets:		
Cash	\$ 68,026	\$ 66,432
Receivables, net	10,061	13,864
Inventories, net	20,232	17,828
Prepaid expenses and other current assets	6,405	7,538
Total current assets	<u>104,724</u>	<u>105,662</u>
Restricted cash, long-term	11,064	10,000
Property, plant and equipment, net of accumulated depreciation of \$13,477 and \$11,897, respectively	76,378	34,855
Other long-term assets, net	41,785	30,647
Total Assets	<u>\$ 233,951</u>	<u>\$ 181,164</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	\$ 12,245	\$ 16,108
Current portion of debt obligations	1,611	1,131
Other current liabilities	6,188	6,645
Total current liabilities	<u>20,044</u>	<u>23,884</u>
Long-term debt obligations, net of current portion	20,119	3,450
Other long-term liabilities	13,647	13,851
Total Liabilities	<u>53,810</u>	<u>41,185</u>
Commitments and contingencies (Note 8)		
Redeemable preferred stock - Series A Convertible Preferred subject to redemption: par value \$0.001 per share, 8,900,000 shares authorized, 5,362,926 shares issued and outstanding	18,927	—
Stockholders' equity:		
Preferred stock: par value of \$.001 per share, 50,000,000 shares authorized, none issued and outstanding except for Series A Convertible Preferred Stock	—	—
Common stock: par value of \$.001 per share, 100,000,000 shares authorized, 31,854,636 and 23,788,319 shares issued, and 27,236,490 and 19,170,173 shares outstanding at March 31, 2023 and December 31, 2022, respectively	32	24
Treasury stock, at cost: 4,618,146 and 4,618,146 shares as of March 31, 2023 and December 31, 2022, respectively	(47,692)	(47,692)
Additional paid-in capital	132,590	103,698
Retained earnings	76,284	83,949
Total Stockholders' Equity	<u>161,214</u>	<u>139,979</u>
Total Liabilities and Stockholders' Equity	<u>\$ 233,951</u>	<u>\$ 181,164</u>

See Notes to the Condensed Consolidated Financial Statements

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Statements of Operations
(Unaudited)

<i>(in thousands, except per share data)</i>	Three Months Ended March 31,	
	2023	2022
Revenues:		
Consumables	\$ 20,805	\$ 26,402
Total revenues	20,805	26,402
Operating expenses:		
Consumables cost of revenue, exclusive of depreciation and amortization	17,175	21,507
Payroll and benefits	4,699	2,626
Legal and professional fees	4,538	2,172
General and administrative	2,778	1,926
Depreciation, amortization, depletion and accretion	2,137	1,506
Gain on sale of Marshall Mine, LLC	(2,695)	—
Total operating expenses	28,632	29,737
Operating loss	(7,827)	(3,335)
Other income (expense):		
Earnings from equity method investments	638	833
Interest expense	(534)	(86)
Other	182	(445)
Total other income	286	302
Loss before income taxes	(7,541)	(3,033)
Income tax benefit	33	—
Net loss	\$ (7,508)	\$ (3,033)
Loss per common share (Note 1):		
Basic	\$ (0.32)	\$ (0.17)
Diluted	\$ (0.32)	\$ (0.17)
Weighted-average number of common shares outstanding:		
Basic	23,770	18,344
Diluted	23,770	18,344

See Notes to the Condensed Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Statements of Changes in Stockholders' Equity
(Unaudited)

<i>(Amounts in thousands, except share data)</i>	<u>Common Stock</u>		<u>Treasury Stock</u>		<u>Additional Paid- in Capital</u>	<u>Retained Earnings</u>	<u>Total Stockholders' Equity</u>
	<u>Shares</u>	<u>Amount</u>	<u>Shares</u>	<u>Amount</u>			
Balances, January 1, 2023	23,788,319	\$ 24	(4,618,146)	\$ (47,692)	\$ 103,698	\$ 83,949	\$ 139,979
Stock-based compensation	483,242	—	—	—	563	—	563
Issuance of common stock pursuant to Arq Acquisition, net of offering costs	3,814,864	4	—	—	12,433	—	12,437
Issuance of common stock related to PIPE Investment, net of offering costs	3,842,315	4	—	—	15,216	—	15,220
Issuance of warrants	—	—	—	—	826	—	826
Repurchase of common shares to satisfy minimum tax withholdings	(74,104)	—	—	—	(146)	—	(146)
Preferred stock dividends declared on redeemable preferred stock	—	—	—	—	—	(157)	(157)
Net loss	—	—	—	—	—	(7,508)	(7,508)
Balances, March 31, 2023	31,854,636	\$ 32	(4,618,146)	\$ (47,692)	\$ 132,590	\$ 76,284	\$ 161,214

<i>(Amounts in thousands, except share data)</i>	<u>Common Stock</u>		<u>Treasury Stock</u>		<u>Additional Paid- in Capital</u>	<u>Retained Earnings</u>	<u>Total Stockholders' Equity</u>
	<u>Shares</u>	<u>Amount</u>	<u>Shares</u>	<u>Amount</u>			
Balances, January 1, 2022	23,460,212	\$ 23	(4,618,146)	\$ (47,692)	\$ 102,106	\$ 92,864	\$ 147,301
Stock-based compensation	323,742	1	—	—	463	—	464
Repurchase of common shares to satisfy minimum tax withholdings	(59,736)	—	—	—	(382)	—	(382)
Net loss	—	—	—	—	—	(3,033)	(3,033)
Balances, March 31, 2022	23,724,218	\$ 24	(4,618,146)	\$ (47,692)	\$ 102,187	\$ 89,831	\$ 144,350

See Notes to the Condensed Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
(Unaudited)

<i>(in thousands)</i>	Three Months Ended March 31,	
	2023	2022
Cash flows from operating activities		
Net loss	\$ (7,508)	\$ (3,033)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:		
Depreciation, amortization, depletion and accretion	2,137	1,506
Gain on sale of Marshall Mine, LLC	(2,695)	—
Operating lease expense	738	663
Earnings from equity method investments	(638)	(833)
Stock-based compensation expense	563	464
Other non-cash items, net	11	550
Changes in operating assets and liabilities:		
Receivables and related party receivables	3,867	2,095
Prepaid expenses and other assets	3,360	(725)
Inventories, net	(2,312)	(2,359)
Other long-term assets, net	(479)	3,116
Accounts payable and accrued expenses	(14,025)	(3,210)
Other current liabilities	(210)	(1,231)
Operating lease liabilities	(787)	2,680
Other long-term liabilities	273	910
Distributions from equity method investees, return on investment	—	1,501
Net cash (used in) provided by operating activities	<u>(17,705)</u>	<u>2,094</u>
Cash flows from investing activities		
Acquisition of property, plant, equipment, and intangible assets, net	(3,545)	(1,359)
Cash and restricted cash acquired in business acquisition	2,225	—
Disposal of Marshall Mine, LLC	(2,177)	—
Distributions from equity method investees in excess of cumulative earnings	638	1,013
Mine development costs	(38)	(93)
Net cash used in investing activities	<u>(2,897)</u>	<u>(439)</u>
Cash flows from financing activities		
Net proceeds from common stock issuance	15,220	—
Term Loan, related party, net of discount and issuance costs	8,522	—
Principal payments on finance lease obligations	(295)	(226)
Repurchase of common stock to satisfy tax withholdings	(146)	(382)
Principal payments on notes payable	(41)	—
Dividends paid on common stock	—	(20)
Net cash provided by (used) in financing activities	<u>23,260</u>	<u>(628)</u>
Increase in Cash and Restricted Cash	2,658	1,027
Cash and Restricted Cash, beginning of period	76,432	88,780
Cash and Restricted Cash, end of period	<u>\$ 79,090</u>	<u>\$ 89,807</u>
Supplemental disclosure of non-cash investing and financing activities:		
Equity issued as consideration for acquisition of business	\$ 31,205	\$ —
Change in accrued purchases for property and equipment	\$ 520	\$ 10
Paid-in-kind dividend on redeemable preferred stock	\$ 157	\$ —

See Notes to the Condensed Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

Note 1 - Basis of Presentation

Nature of Operations

Advanced Emissions Solutions, Inc. ("ADES" or the "Company") is a Delaware corporation with its principal office located in Greenwood Village, Colorado, manufacturing and logistics operations located in Louisiana and a manufacturing facility in Kentucky. The Company is an environmental technology company and has been principally engaged in the sale of consumable air and water treatment solutions including activated carbon ("AC") and chemical technologies. The Company's proprietary technologies in the advanced purification technologies ("APT") market enable customers to reduce air and water contaminants, including mercury and other pollutants, to maximize utilization levels and to improve operating efficiencies to meet the challenges of existing and pending air quality and water regulations. The Company manufactures and sells AC and other chemicals used to capture and remove contaminants for coal-fired power generation, industrial and water treatment markets. The Company also owns an associated lignite mine ("Five Forks Mine") that currently supplies the primary raw material for manufacturing AC.

Acquisition

On February 1, 2023 (the "Acquisition Date"), the Company entered into a Securities Purchase Agreement (the "Purchase Agreement") with Arq Limited ("Arq Ltd."), a company incorporated under the laws of Jersey, pursuant to which the Company acquired all of the direct and indirect equity interests of Arq Ltd.'s subsidiaries (the "Arq Acquisition," and hereafter referred to as "Arq") in exchange for consideration (the "Purchase Consideration") totaling \$31.2 million, and consisting of (i) 3,814,864 shares of the Company's common stock, par value \$0.001 per share (the "Common Stock") and (ii) 5,294,462 shares (the "Preferred Shares") of the Company's Series A Convertible Preferred Stock, par value \$0.001 per share (the "Series A Preferred Stock").

Arq's principal office is located in London, United Kingdom with an additional office located in Corbin, Kentucky near its production facility ("the Corbin Facility"). The Corbin location consists of bituminous coal reserves and a manufacturing facility to recover and purify the bituminous coal fines for sale or further conversion to value-added specialty chemicals. Arq is a pre-revenue, environmental technology company that has developed a process for transforming coal waste into a purified, microfine carbon powder, known as Arq powder™ ("Arq Powder"). The Company expects to begin using Arq Powder to produce granular activated carbon ("GAC") products in the second half of 2024.

See further discussion of the Arq Acquisition in Note 2.

Loan Agreement

As required under the Purchase Agreement, and on February 1, 2023 (the "Closing Date"), the Company, as borrower, certain of its subsidiaries, as guarantors, and CF Global ("CFG"), a related party, as administrative agent and lender (the "Lender"), entered into a term loan (the "Term Loan") in the amount of \$10.0 million, less original issue discount ("OID") of \$0.2 million, upon execution of a Term Loan and Security Agreement (the "Loan Agreement"). The Company received net cash proceeds of \$8.5 million after deducting the OID and debt issuance costs of \$1.3 million.

The Loan Agreement also provides for the issuance of a warrant (the "Warrant") to CFG to purchase 325,457 shares of Common Stock (the "Warrant Shares"), which represents 1% of the post-Arq Acquisition and PIPE Investment (as defined below) fully diluted share capital (as defined in the Loan Agreement), at an exercise price of \$0.01 per share. The Warrant has a term of 7 years and contains a cashless exercise provision.

See further discussion of the Term Loan in Note 6.

Equity Financing

On February 1, 2023, the Company entered into Subscription Agreements (the "Subscription Agreements") with certain persons (the "Subscribers"), which included existing shareholders of Arq Ltd., three of which were appointed to the Company's Board of Directors (the "Board"), pursuant to which the Subscribers subscribed for and purchased shares of Common Stock for an aggregate purchase price of \$15.4 million and at a price per share of \$4.00 (such transaction, the "PIPE Investment").

See further discussion of the PIPE Investment in Note 11.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

Basis of Presentation

The accompanying Condensed Consolidated Financial Statements of ADES are unaudited and have been prepared in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") and with Article 10 of Regulation S-X of the Securities and Exchange Commission. In compliance with those instructions, certain information and footnote disclosures normally included in annual consolidated financial statements prepared in accordance with U.S. GAAP have been condensed or omitted.

The unaudited Condensed Consolidated Financial Statements of ADES in this quarterly report ("Quarterly Report") are presented on a consolidated basis and include ADES and its wholly-owned subsidiaries (collectively, the "Company"). Also included within the unaudited Condensed Consolidated Financial Statements are the Company's unconsolidated equity investments, Tinum Group and Tinum Services, which are accounted for under the equity method of accounting, and Highview Enterprises Limited (the "Highview Investment"), which is accounted for in accordance with U.S. GAAP applicable to equity investments that do not qualify for the equity method of accounting.

Results of operations and cash flows for the interim periods are not necessarily indicative of the results that may be expected for the entire year. All significant intercompany transactions and accounts were eliminated in consolidation for all periods presented in this Quarterly Report.

In the opinion of management, these Condensed Consolidated Financial Statements include all normal and recurring adjustments considered necessary for a fair presentation of the results of operations, financial position, stockholders' equity and cash flows for the interim periods presented. These Condensed Consolidated Financial Statements should be read in conjunction with the Company's Annual Report on Form 10-K for the year ended December 31, 2022 (the "2022 Form 10-K"). Significant accounting policies disclosed therein have not changed.

Earnings (Loss) Per Share

Basic earnings (loss) per share is computed using the weighted-average number of shares of common stock outstanding during the reporting period. Diluted earnings (loss) per share is computed in a manner consistent with that of basic earnings per share, while considering other potentially dilutive securities.

For the three months ended March 31, 2023 and 2022, potentially dilutive securities consist of unvested restricted stock awards ("RSAs") and contingent performance stock units ("PSUs"). For the three months ended March 31, 2023 potentially dilutive securities also consist of outstanding shares of Series A Preferred Stock, which contain non-forfeitable rights to earnings and dividends in the form of cash or shares of Series A Preferred Stock (the "Preferred Dividends"), determined at the option of the Company, and are deemed to be participating securities ("Participating Securities"). As permitted, the Company has elected not to separately present basic or diluted earnings (loss) per share attributable to Participating Securities in the Consolidated Statement of Operations for the three months ended March 31, 2023.

The following table sets forth the calculations of basic and diluted loss per share:

<i>(in thousands, except per share amounts)</i>	Three Months Ended March 31,	
	2023	2022
Net loss	\$ (7,508)	\$ (3,033)
Less: Dividends declared on redeemable preferred stock	157	—
Loss attributable to common stockholders	\$ (7,665)	\$ (3,033)
Basic weighted-average common shares outstanding	23,770	18,344
Add: dilutive effect of equity instruments	—	—
Diluted weighted-average shares outstanding	23,770	18,344
Loss per share - basic	\$ (0.32)	\$ (0.17)
Loss per share - diluted	\$ (0.32)	\$ (0.17)

For the three months ended March 31, 2023 and 2022, potentially dilutive securities of 4.2 million and 0.3 million shares of common stock, respectively, were outstanding but were not included in the calculation of diluted net loss per share because the effect would have been anti-dilutive.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. There have been no changes in the Company's critical accounting estimates from those that were disclosed in the 2022 Form 10-K. Actual results could differ from these estimates.

Risks and Uncertainties

For 2023, the Company is principally dependent on the operations of its APT business and its cash on hand to provide liquidity over the near and long term. The Company's revenues, sales volumes, earnings and cash flows are significantly affected by prices of competing power generation sources such as natural gas and renewable energy. During periods of low natural gas prices, natural gas provides a competitive alternative to coal-fired power generation and therefore, coal consumption for purposes of power generation may be reduced, which in turn reduces the demand for the Company's products. However, during periods of higher prices for competing power generation sources, there is an increase in coal consumption and thus demand for the Company's products also increases.

In addition, coal consumption for purposes of power generation and demand for the Company's products are affected by the demand for electricity, which is higher in the warmer and colder months of the year. As a result, the Company's interim period results are subject to seasonal variations whereby its revenues and cost of revenues tend to be higher in its first and third fiscal quarters compared to its second and fourth fiscal quarters. Abnormal temperatures during the summer and winter months may significantly affect coal consumption and impurities within various municipalities' water sources, and thus impact the demand for the Company's products.

Concentration of credit risk

The Company is exposed to concentrations of credit risk primarily related to cash held at financial institutions and accounts receivable. The Company regularly monitors its credit risk to mitigate the possibility of current and future exposures resulting in a loss. Historically, the losses related to credit risk have been immaterial.

The Company evaluates the creditworthiness of its customers prior to entering into agreements to sell its products and, as necessary, throughout the life of the customer relationship.

The Company holds substantially all of its cash at one financial institution as of March 31, 2023. If a financial institution was unable to perform its obligations, the Company would be at risk regarding the amount of cash and investments in excess of the Federal Deposit Insurance Corporation limits (currently \$250 thousand) that would be returned to the Company.

Reclassifications

Certain balances have been reclassified from the prior year to conform to the current year presentation. Such reclassifications had no effect on the Company's results of operations or financial position in any of the periods presented.

New Accounting Standards

Effective January 1, 2023, the Company adopted ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). The main objective of ASU 2016-13 is to provide financial statement users with more decision-useful information about the expected credit losses on financial instruments and other commitments to extend credit held by a reporting entity at each reporting date. The adoption of ASU 2016-13 did not have a material impact on the Company's financial statements and disclosures.

Note 2 - Arq Acquisition

The Company accounted for the Arq Acquisition as an acquisition of a business as of the Acquisition Date. The total Purchase Consideration was \$31.2 million and has been preliminarily allocated to the acquired assets and assumed liabilities of Arq based on their estimated fair values as of the Acquisition Date. The Purchase Consideration was comprised of the fair values as of the Acquisition Date of 3,814,864 shares of Common Stock, valued at \$12.4 million, and 5,294,462 Preferred Shares, valued at \$18.8 million. The Company also incurred \$8.7 million in acquisition-related costs, which were expensed as incurred and included in the "General and administrative" line item in the Statements of Operations.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

The following table provides the preliminary estimated fair values of the assets acquired and liabilities assumed as of the Acquisition Date:

<i>(in thousands)</i>	Purchase Price Allocation
Fair value of assets acquired:	
Cash	\$ 1,411
Prepaid expenses and other current assets	2,229
Restricted cash, long-term	814
Property, plant and equipment, net	39,159
Other long-term assets, net	11,717
Amount attributable to assets acquired	55,330
Fair Value of liabilities assumed:	
Accounts payable and accrued expenses	9,806
Current portion of long-term debt	494
Other current liabilities	103
Long-term debt, net of current portion	9,199
Other long-term liabilities	4,523
Amount attributable to liabilities assumed	24,125
Net assets acquired	\$ 31,205

The following represents the intangible asset identified as part of the Arq Acquisition and which is included in "Other long-term-assets, net" in the table above:

<i>(in thousands)</i>	Amount	Weighted Average Useful Life (years)
Developed technology	\$ 7,700	20

Redeemable Preferred Stock

In connection with the issuance of the Series A Preferred Stock pursuant to the Purchase Agreement, the Company filed the Certificate of Designations of Preferred Stock for the Series A Preferred Stock (the "Certificate of Designations") with the Secretary of State of the State of Delaware. Under the Certificate of Designations, 8.9 million preferred shares were designated as Series A Preferred Stock.

Each outstanding share of Series A Preferred Stock will be automatically converted into the number of shares of Common Stock described below upon approval by the stockholders of the Company. Each share of Series A Preferred Stock is deemed to have an original issue price of \$4.00 per share (the "Original Issue Amount"). The number of shares of Common Stock issued upon conversion of each share of Series A Preferred Stock shall be equal to the product of (i) the sum of (A) the Original Issue Amount plus (B) an amount equal to the cumulative amount of the accrued and unpaid dividends on such share at such time divided by (ii) the Original Issue Amount, subject to adjustment.

Holders of the Series A Preferred Stock are entitled to receive cumulative dividends, which accrue quarterly on the last day of each applicable quarter (whether or not declared or funds for their payment are lawfully available) and are payable quarterly, in arrears, on the earlier to occur of (a) the date any dividend is paid to holders of Common Stock with respect to such quarter and (b) 30 days after the end of each quarter (the "Series A Quarterly Dividend") at the rate per share of Series A Preferred Stock equal to the greater of (i) if the Company declares a cash dividend on the Common Stock with respect to such quarter, the amount of the cash dividend that would be received by a holder of Common Stock in which such share of Series A Preferred Stock would be convertible on the record date for such cash dividend and (ii) an annual rate (the "Rate") of 8.0% of the Original Issue Amount compounded quarterly with respect to such quarter. The Rate will increase by 2.0% on the first day of the first quarter ending on or after the 635th day following the closing date of the first issuance of Series A Preferred Stock and on each subsequent anniversary of such date.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

The Series A Quarterly Dividend is payable in cash or in additional shares of Series A Preferred Stock (the "Series A PIK Shares"), at the option of the Company. The number of Series A PIK Shares to be issued is determined by dividing (i) the Series A Quarterly Dividend payable with respect to all shares of Series A Preferred Stock held by a holder thereof by (ii) the aggregate Original Issue Amount of all shares of Series A Preferred Stock held by a holder thereof, and each fractional Series A PIK Share is rounded to the nearest whole Series A PIK Share (with 0.5 of a share being rounded down to 0.0).

On March 31, 2023, the Company declared a dividend of 68,464 Series A PIK Shares with respect to the accrued dividends on the Series A Preferred Stock for the first quarter of 2023 (the "First Quarter PIK Dividend"). The First Quarter PIK Dividend was recorded at the estimated fair value of \$0.2 million as of March 31, 2023 and was paid on April 21, 2023.

In the event of the Company's liquidation, dissolution or winding up, after payment or provision for payment of its debt and other liabilities, a holder of Series A Preferred Stock will receive a liquidating distribution equal to the amount of the cumulative accrued but unpaid dividends on each share of Series A Preferred Stock held by such holder. After the payment to the holders of Series A Preferred Stock of such liquidation preference, the holders of outstanding shares of Series A Preferred Stock will participate *pari passu* with the holders of Common Stock on an as-converted basis in any remaining distributions out of the Company's assets available for distribution to stockholders.

Holders of shares of Series A Preferred Stock generally have no voting rights. However, the Company is restricted from taking certain actions without the written consent or affirmative vote of the holders of at least a majority of the then outstanding shares of Series A Preferred Stock, including, but not limited to, amending the Company's Certificate of Incorporation or Bylaws in a manner that adversely affects the rights of the Series A Preferred Stock or consummating a merger of the Company with or into another party or a sale of substantially of its assets.

If the approval by the stockholders of the Company of conversion of the Series A Preferred Stock has not been obtained, each outstanding share of Series A Preferred Stock will be redeemed by the Company on February 1, 2028 for cash, at a redemption price equal to the sum of (i) the product of (x) 140% and (y) the Original Issue Amount, plus (ii) an amount equal to the cumulative amount of accrued and unpaid dividends on such share of Series A Preferred Stock.

Under the terms of the Purchase Agreement, a total of 833,914 Preferred Shares, are being held in escrow (the "Escrow Shares") based on a contingent redemption feature, (the "Contingent Redemption Feature," as defined below). The fair value of the Preferred Shares issued was determined to be \$3.46 per Preferred Share on the Acquisition Date (the "Preferred Share Price") plus the value of the Contingent Redemption Feature related to the Escrow Shares.

The Escrow Shares are being withheld pending a determination by the IRS that no tax withholding is required on the Purchase Consideration issued to Arq Ltd. (the "Arq Ltd. Tax Liability"). The Company estimated the fair value of the potential Arq Ltd. Tax Liability at \$3.3 million. In the event that the IRS determines that no withholding is required by Arq Ltd. in connection with the Purchase Consideration received by Arq Ltd., all of the Escrow Shares will be released and delivered to Arq Ltd. In the event that the IRS determines that any amount of withholding is required by Arq Ltd., the Company has agreed to redeem a sufficient number of Escrow Shares to fund the required payment to the IRS, and that number of Escrow Shares will be returned to the Company (the "Contingent Redemption Feature"). The number of Escrow Shares to be returned to the Company is equal to the required withholding amount divided by the Original Issue Amount, not to exceed a maximum of 833,914 Escrow Shares, and is equal to \$3.3 million based on the Original Issue Amount (the "Maximum Contingent Redemption Amount"). The fair value of the Escrow Shares is the Maximum Contingent Redemption Amount and the fair value of the non-escrowed Preferred Shares ("Non Escrow Shares") is the Preferred Share Price.

The Series A Preferred Stock contains a mandatory redemption feature in the event the Preferred Shares, including future Preferred Shares issued under dividend requirements, are not converted into shares of Common Stock prior to February 1, 2028. The Company has determined that both the Escrow Shares and the Non Escrow Shares do not meet the definition of mandatorily redeemable financial instruments as there is a substantive conversion feature, and are therefore not classified as liabilities. As both the Escrow Shares and Non Escrow Shares represent financial instruments that are redeemable for cash, SEC guidance mandates that preferred securities which are redeemable upon the occurrence of an event that is not solely within the control of the issuer be classified outside of permanent equity as "temporary equity." Accordingly, the Company has classified all of the Preferred Shares as temporary equity and reported them as "Redeemable preferred stock" in the Consolidated Balance Sheet as of as of March 31, 2023.

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Other

The amounts of revenues and net loss for Arq for the period from the Acquisition Date to March 31, 2023 are as follows:

<i>(in thousands)</i>	Three Months Ended March 31,
	2023
Revenues	\$ —
Net loss	\$ (3,650)

The following represents the pro forma effects of the Arq Acquisition as if it had occurred on January 1, 2022. The pro forma net loss for each of the two years presented has been calculated after applying the Company's accounting policies in effect for those years. In addition, pro forma net loss includes: (1) for the three months ended March 31, 2022, an increase in Payroll and benefits for compensation expense of \$1.9 million payable to certain Arq employees, triggered by change in control provisions in employment agreements, as well as in employee severance agreements that has not been recognized in the historical financial statements, assuming such amounts will be paid in cash; (2) for each of the three months ended March 31, 2023 and 2022, a decrease in depreciation and amortization of \$0.2 million and \$0.6 million, respectively, resulting from fair value adjustments to Property, plant, equipment; (3) for each of the three months ended March 31, 2023 and 2022, an increase in amortization of \$0.1 million and \$0.1 million, respectively, resulting from fair value adjustments to intangible assets; (4) for each of the three months ended March 31, 2023 and 2022, increases to Interest expense of \$0.2 million and \$0.3 million, respectively for: (a) the issuance of the Term Loan (as defined below) including stated interest and the amortization of the Term Loan's discount and issuance costs and (b) amortization of debt discount related to a fair value adjustment to an assumed term loan of Arq; and (5) the removal of \$6.6 million of transaction costs incurred for the period from April 1, 2022 to March 31, 2023 but included as additional transaction costs for the three months ended March 31, 2022, together with the income tax effects on (1) through (5). Since Arq had no revenues for the three months ended March 31, 2023 or 2022, pro forma revenues are the same as the Company's reported revenues for those periods.

<i>(in thousands)</i>	Three Months Ended March 31,	
	2023	2022
Revenues	\$ 20,805	\$ 26,402
Net loss	\$ (4,069)	\$ (13,009)

Note 3 - Marshall Mine

On September 2, 2022, (the "MM Purchase Date"), a subsidiary of Advanced Emissions Solutions, Inc., ADA Carbon Solutions (Operations), LLC (the "Seller"), entered into a Membership Interest Purchase Agreement (the "MM Purchase Agreement") with Caddo Creek Resources Company, L.L.C. (the "Buyer") to sell all of its membership interests in Marshall Mine, LLC to the Buyer (the "MM Transaction") in exchange for a cash payment to be made by the Seller to the Buyer and the assumption by the Buyer of certain liabilities of Marshall Mine, LLC. The Buyer previously operated the Marshall Mine on behalf of Marshall Mine, LLC and was performing final mine reclamation under a fixed price contract.

The obligations of the Seller and the Buyer to close the Transaction were subject to certain customary closing conditions (the "Conditions") as set forth in the Purchase Agreement, including, but not limited to, (1) obtaining the approval of the Railroad Commission of Texas (the "Commission") for a change in control of Marshall Mine from Seller to Buyer or an affiliate of the Buyer; and (2) the Buyer replacing the Seller's surety bond with a reclamation performance bond, letter of credit or other form of security to which the Buyer or an affiliate of the Buyer is the principal that is satisfactory to the Commission.

On March 27, 2023, (the "MM Closing Date") all of the Conditions for closing the MM Transaction were satisfied, and the Company made a cash payment to the Buyer in the amount of \$2.2 million (the "MM Purchase Price"). As of the MM Closing Date, Marshall Mine, LLC had outstanding liabilities of approximately \$4.9 million that were discharged upon payment of the MM Purchase Price by the Company, and the Company recognized a gain of approximately \$2.7 million in the Statement of Operations for the three months ended March 31, 2023.

Subsequent to March 31, 2023, the Company was permitted to reduce its restricted cash requirement by \$2.3 million to \$7.7 million.

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Note 4 - Revenues

Trade receivables represent an unconditional right to consideration in exchange for goods or services transferred to a customer. The Company invoices its customers in accordance with the terms of the contract. Credit terms are generally net 30 - 45 days from the date of invoice. The timing between the satisfaction of performance obligations and when payment is due from the customer is generally not significant.

Contract liabilities are comprised of deferred revenue, which represents an obligation to transfer goods or services to a customer for which the Company has received consideration from the customer and, if deliverable within one year or less, is included in "Other current liabilities" in the Condensed Consolidated Balance Sheets and, if deliverable outside of one year, is included in "Other long-term liabilities" in the Condensed Consolidated Balance Sheets.

The following table shows the components of the Company's Receivables, net:

<i>(in thousands)</i>	As of	
	March 31, 2023	December 31, 2022
Trade receivables, net	\$ 9,989	\$ 13,789
Other receivables	72	75
Receivables, net	<u>\$ 10,061</u>	<u>\$ 13,864</u>

For the three months ended March 31, 2023 and 2022, all material performance obligations related to revenues recognized were satisfied at a point in time. For the three months ended March 31, 2023 and 2022, approximately 14% and 11%, respectively, of Consumables revenues were generated in Canada, and all other revenues were generated in the U.S.

Note 5 - Inventories, net

The following table summarizes the Company's inventories recorded at the lower of average cost or net realizable value, as of March 31, 2023 and December 31, 2022:

<i>(in thousands)</i>	As of	
	March 31, 2023	December 31, 2022
Product inventory, net	\$ 10,356	\$ 9,479
Raw material inventory	9,876	8,349
Total inventories, net	<u>\$ 20,232</u>	<u>\$ 17,828</u>

Note 6 - Debt Obligations

<i>(in thousands)</i>	As of	
	March 31, 2023	December 31, 2022
Term Loan due February 2027, related party	\$ 10,000	\$ —
Arq Loan due January 2036	9,960	—
Finance lease obligations	4,287	4,581
	24,247	4,581
Unamortized debt discounts	(1,288)	—
Unamortized debt issuance costs	(1,229)	—
	21,730	4,581
Less: Current maturities	(1,611)	(1,131)
Total long-term debt obligations	<u>\$ 20,119</u>	<u>\$ 3,450</u>

Term Loan

The Term Loan has a term of 48 months and bears interest at a rate equal to either (a) Adjusted Term SOFR (subject to a 1.00% floor and a cap of 2.00%) plus a margin of 9.00% paid in cash and 5.00% paid in kind or (b) Base Rate plus a margin of 8.00% paid in cash and 5.00% paid in kind, which interest on the Term Loan in each case shall be payable (or capitalized, in the case of in kind interest) quarterly in arrears.

Advanced Emissions Solutions, Inc. and Subsidiaries
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The Company may prepay the Term Loan at any time subject to the following prepayment premium: (i) prior to the twelve month anniversary of the Closing Date, the Make-Whole Amount (as defined below), (ii) thereafter but prior to the thirty-six month anniversary of the Closing Date, 2.00% of the outstanding principal amount of the Term Loan being repaid or prepaid or (iii) thereafter until the maturity date, 1.00% of the outstanding principal amount of the Term Loan being repaid or prepaid. The "Make-Whole Amount," with respect to any repayment or prepayment, is (i) an amount equal to all required interest payable (except for currently accrued and unpaid interest) on the aggregate principal amount of the Term Loan subject to such prepayment or repayment from the date of such prepayment or repayment through but excluding the date that is the first anniversary of the Closing Date calculated using an interest rate equal to (x) Adjusted Term SOFR for an interest period of one month in effect on the third U.S. Government Securities Business Day prior to such prepayment or repayment plus (y) 14.00% per annum and assuming all interest was paid in cash, plus (ii) a prepayment premium of 2.00% on the aggregate principal amount of the Term Loan subject to such prepayment or repayment.

The Term Loan is secured by substantially all of the assets of the Company and its subsidiaries (including those acquired in the Acquisition, but excluding those pledged as collateral under the Arq Loan, as defined and described below), subject to customary exceptions. The Loan Agreement includes, among others, the following covenants: (1) beginning with the first fiscal quarter after March 31, 2023 and as of the end of each fiscal quarter thereafter, the Company must maintain a minimum unrestricted cash balance of \$5.0 million; (2) (x) as of December 31, 2023, for the fiscal year then ended, the Company must have a minimum annual revenue, on a consolidated basis, of \$70.0 million, (y) as of December 31, 2024, for the fiscal year then ended, the Company must have a minimum annual revenue, on a consolidated basis, of \$85.0 million and (z) for any fiscal year thereafter, the Company must have a minimum annual revenue, on a consolidated basis, of \$100.0 million; (3) (x) as of December 31, 2024, for the fiscal year then ended, the Company must have a minimum Consolidated EBITDA of \$3.0 million and (y) for any fiscal year thereafter, the Company must have a minimum Consolidated EBITDA of \$16.0 million; and (4) beginning after the fiscal quarter ending September 30, 2023, during an LTV Trigger Period, ADES must not exceed a loan to value (based on the consolidated total assets of the Company and its subsidiaries) ratio of 0.40:1.00.

The Company allocated the cash proceeds of the Term Loan to both the Term Loan and the Warrant based on their relative fair values. The amount allocated to the Warrant was recorded as a debt discount and is amortized to interest expense over the term of the Term Loan. The standalone fair value of the Term Loan was based on a comparison of borrowings and associated credit ratings consistent with those of the Company. As the Warrant is exercisable for \$0.01 per share, the fair value is deemed to be equal to the fair value of the underlying shares, and accordingly, the fair value of the Warrant was determined as the number of shares issuable from the exercise of the Warrant (based on 1.0% of post-transaction fully diluted share capital, as defined in the Purchase Agreement) multiplied by the closing share price of the Company's common stock on the Acquisition Date.

Arq Loan

As consideration in the Arq Acquisition, the Company assumed a term loan (the "Arq Loan") held by certain Arq subsidiaries as set out in the Arq Loan (the "Arq Borrowers") with a financial institution in the principal amount of \$10.0 million. The Company recorded the Arq Loan on the Acquisition Date at its estimated fair value of \$9.7 million, with the difference between the estimated fair value and the principal amount of \$0.3 million recorded as a debt discount. This debt discount is recognized as interest expense over the term of the Arq Loan.

The Arq Loan was executed on January 27, 2021 and is comprised of two promissory notes (the "Notes"): (1) "Note A" in the principal amount of \$8.0 million, which is guaranteed by the U.S. Department of Agriculture; and (2) "Note B" in the principal of \$2.0 million. The Notes expire on January 27, 2036 and bear interest at 6.0% per annum through January 2026 and at prime plus 2.75% thereafter. Beginning January 27, 2023 and for the balance of the term of the Arq Loan, the Arq Borrowers are required to make combined interest and principal payments monthly in the fixed amount of \$0.1 million. Interest is computed and payable on the outstanding principal as of the end of the prior month and the balance of the fixed monthly payment amount is applied to the outstanding principal. The Notes carry a prepayment penalty of 3.0% of the outstanding principal if paid prior to January 27, 2024, 2.0% of the outstanding principal if paid prior to January 27, 2025 and 1.0% of the outstanding principal if paid prior to January 27, 2026. Thereafter, the Arq Loan may be prepaid without penalty.

The Arq Loan is secured by substantially all assets of the Arq Borrowers and includes among others, the following covenants with respect to the Arq Borrowers, which are tested annually (Capitalized terms are defined in the Arq Loan): (a) Total Indebtedness to Net Worth greater than 4 to 1; (b) Balance Sheet Equity greater than or equal to 20% of the book value of all assets of the Arq Borrowers; (c) (i) net income plus interest, taxes, depreciation and amortization divided by (ii) interest expense plus current maturities on long-term debt greater than or equal to 1.25 to 1.

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Note 7 - Leases

The Company's operating and finance lease right-of-use ("ROU") assets and liabilities as of March 31, 2023 and December 31, 2022 consisted of the following items (in thousands):

Leases	As of	
	March 31, 2023	December 31, 2022
Operating Leases		
Operating lease right-of-use assets, net of accumulated amortization ⁽¹⁾	\$ 10,122	\$ 7,734
Operating lease obligations, current	\$ 2,554	\$ 2,724
Long-term operating lease obligations	7,642	5,133
Total operating lease obligation	\$ 10,196	\$ 7,857
Finance Leases		
Finance lease right-of-use assets, net of accumulated amortization ⁽²⁾	\$ 2,343	\$ 2,565
Finance lease obligations, current	\$ 1,117	\$ 1,131
Long-term finance lease obligations	3,170	3,450
Total finance lease obligations	\$ 4,287	\$ 4,581

(1) Operating lease ROU assets are reported net of accumulated amortization of \$5.1 million and \$4.4 million as of March 31, 2023 and December 31, 2022, respectively.

(2) Finance lease ROU assets are reported net of accumulated amortization of \$2.2 million and \$2.0 million as of March 31, 2023 and December 31, 2022, respectively.

Operating leases

ROU assets under operating leases and operating lease liabilities are included in the "Other long-term assets" and "Other current liabilities" and "Other long-term liabilities" line items, respectively, in the Condensed Consolidated Balance Sheets as of March 31, 2023 and December 31, 2022.

Lease expense for operating leases for the three months ended March 31, 2023 was \$1.4 million, of which \$1.1 million is included in the "Consumables - cost of revenue, exclusive of depreciation and amortization" line item, and \$0.3 million is included in the "General and administrative" line item in the Condensed Consolidated Statements of Operations for those periods. Lease expense for operating leases for the three months ended March 31, 2022 was \$1.1 million, of which \$1.0 million, is included in the "Consumables - cost of revenue, exclusive of depreciation and amortization" line item, and \$0.1 million, is included in "General and administrative" line item in the Condensed Consolidated Statements of Operations for those periods.

Finance leases

ROU assets under finance leases are included in the "Property, plant and equipment" line item in the Condensed Consolidated Balance Sheets as of March 31, 2023 and December 31, 2022. Interest expense related to finance lease obligations and amortization of ROU assets under finance leases are included in the "Interest expense" and "Depreciation, amortization, depletion and accretion" line items, respectively, in the Condensed Consolidated Statements of Operations for the three months ended March 31, 2023 and 2022.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

Lease financial information as of and for the three months ended March 31, 2023 and 2022 is provided in the following table:

<i>(in thousands)</i>	Three Months Ended March 31,	
	2023	2022
Finance lease cost:		
Amortization of right-of-use assets	\$ 223	\$ 141
Interest on lease liabilities	307	78
Operating lease cost	982	806
Short-term lease cost	409	243
Variable lease cost ⁽¹⁾	8	9
Total lease cost	\$ 1,929	\$ 1,277
Other Information:		
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows for finance leases	\$ 307	\$ 78
Operating cash flows for operating leases	\$ 787	\$ 738
Financing cash flows for finance leases	\$ 295	\$ 226
Right-of-use assets obtained in exchange for new finance lease liabilities	\$ —	\$ —
Right-of-use assets obtained in exchange for new operating lease liabilities	\$ —	\$ 3,418
Weighted-average remaining lease term - finance leases	2.5 years	2.7 years
Weighted-average remaining lease term - operating leases	7.7 years	4.4 years
Weighted-average discount rate - finance leases	5.9 %	6.3 %
Weighted-average discount rate - operating leases	9.8 %	6.0 %

(1) Primarily includes common area maintenance, property taxes and insurance payable to lessors.

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Notes to Condensed Consolidated Financial Statements
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Note 8 - Commitments and Contingencies

Retention Agreements

As of December 31, 2022, the Company had an outstanding liability of \$1.4 million (the "Retention Liability"), which was included in the "Other current liabilities" line item in the Condensed Consolidated Balance Sheet, related to retention agreements (the "Retention Agreements") executed between the Company and its executive officers and certain other key employees in May 2021 and amended in May 2022 in order to maintain the Company's business operations while it pursued and executed on its strategic initiatives. The Retention Agreements were approved by the Compensation Committee of the Board of Directors and the Board of Directors (the "Board") in May 2021 and May 2022. In August 2022, the Company paid \$1.0 million pursuant to the payment terms of the Retention Agreements and the Retention Liability was paid in full in January 2023.

Surety Bonds and Restricted Cash

As the owner of the Marshall Mine, the Company was required to post a surety bond with a regulatory commission. As of December 31, 2022, the Company posted a \$16.6 million surety bond that was released upon all of the Conditions for closing the MM Transaction being satisfied, which occurred on March 27, 2023.

As the owner of the Five Forks Mine, the Company is required to post a surety bond with a regulatory commission. As of March 31, 2023 and December 31, 2022, the Company had posted a \$7.5 million surety bond related to performance requirements associated with the Five Forks Mine.

As of March 31, 2023 and December 31, 2022, the Company posted cash collateral of \$10.0 million as required by the Company's surety bond provider, which is reported as long-term restricted cash on the Condensed Consolidated Balance Sheets. In April 2023, the Company and the surety bond provider agreed to reduce the cash collateral to \$7.7 million.

As the lessee of the land adjacent to the Corbin Facility, the Company was required to post surety bonds with a regulatory commission for reclamation. As of March 31, 2023, the amount of these surety bonds was \$3.0 million.

Tinum Group

In addition to those obligations described in Note 10, the Company has certain limited obligations contingent upon future events in connection with the activities of Tinum Group. The Company, NexGen Refined Coal, LLC ("NexGen") and two entities affiliated with NexGen have provided an affiliate of the Goldman Sachs Group, Inc. with limited guaranties (the "Tinum Group Party Guaranties") related to certain losses it may suffer as a result of inaccuracies or breach of representations and covenants committed by Tinum Group. The Company also is a party to a contribution agreement with NexGen under which any party called upon to pay on a Tinum Group Party Guaranty is entitled to receive contributions from the other party equal to 50% of the amount paid. The Company has not recorded a liability or expense provision related to this contingent obligation as it believes that it is not probable that a loss will occur with respect to the Tinum Group Party Guaranties.

Legal Proceedings

The Company is from time to time subject to various pending or threatened legal actions and proceedings, including those that arise in the ordinary course of its business. Such matters are subject to many uncertainties and outcomes, the financial impacts of which are not predictable with assurance and that may not be known for extended periods of time. The Company records a liability in its consolidated financial statements for costs related to claims, settlements and judgments where management has assessed that a loss is probable and an amount can be reasonably estimated. There were no significant legal proceedings as of March 31, 2023.

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Notes to Condensed Consolidated Financial Statements
(Unaudited)

Note 9 - Supplemental Financial Information

Supplemental Balance Sheet Information

The following table summarizes the components of Other long-term assets, net as presented in the Condensed Consolidated Balance Sheets:

<i>(in thousands)</i>	As of	
	March 31, 2023	December 31, 2022
Other long-term assets, net:		
Right of use assets, operating leases, net	\$ 10,122	\$ 7,734
Intangible assets, net	8,424	847
Spare parts, net	7,444	6,789
Upfront Customer Consideration	6,348	6,475
Mine development costs, net	5,657	5,478
Mine reclamation asset, net	1,616	1,641
Other	2,174	1,683
Total other long-term assets, net	\$ 41,785	\$ 30,647

Mine development costs include acquisition costs, the cost of other development work and mitigation costs related to the Five Forks Mine and are depleted over the estimated life of the related mine reserves. The Company performs an evaluation of the recoverability of the carrying value of mine development costs to determine if facts and circumstances indicate that their carrying value may be impaired and if any adjustment is warranted. There were no indicators of impairment as of March 31, 2023.

Spare parts include critical spares required to support plant operations. Parts and supply costs are determined using the lower of cost or estimated replacement cost. Parts are recorded as maintenance expenses in the period in which they are consumed or are capitalized if applicable.

Mine reclamation asset, net represents an asset retirement obligation ("ARO") asset related to the Five Forks Mine and is depreciated over its estimated life.

As of March 31, 2023 and December 31, 2022, Other includes the Highview Investment in the amount of \$0.6 million and \$0.6 million, respectively, that is carried at cost, less impairment, plus or minus observable changes in price for identical or similar investments of the same issuer. Fair value measurements, if any, represent Level 2 measurements. The Highview Investment is evaluated for indicators of impairment such as an event or change in circumstances that may have a significant adverse effect on the fair value of the investment. There were no changes to the carrying value of the Highview Investment for the three months ended March 31, 2023 as there were no indicators of impairment or observable price changes for identical or similar investments.

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The following table details the components of Other current liabilities and Other long-term liabilities as presented in the Condensed Consolidated Balance Sheets:

<i>(in thousands)</i>	As of	
	March 31, 2023	December 31, 2022
Other current liabilities:		
Current portion of operating lease obligations	\$ 2,554	\$ 2,724
Income and other taxes payable	866	1,039
Current portion of mine reclamation liability	163	548
Other ⁽¹⁾	2,605	2,334
Total other current liabilities	\$ 6,188	\$ 6,645
Other long-term liabilities:		
Operating lease obligations, long-term	\$ 7,642	\$ 5,133
Mine reclamation liabilities	5,259	7,985
Other	746	733
Total other long-term liabilities	\$ 13,647	\$ 13,851

(1) Included in Other current liabilities is \$1.7 million related to the Repayment Agreement as defined in Note 10.

As of March 31, 2023 and December 31, 2022, the Mine reclamation liability related to the Five Forks Mine is included in Other long-term liabilities. As of December 31, 2022, the Mine reclamation liability related to Marshall Mine was included in Other current liabilities and Other long-term liabilities.

As part of the Arq Acquisition, the Company assumed asset retirement obligations related to two sites; a coal waste site adjacent to the Corbin Facility (the "Corbin ARO") and an inactive mine located in West Virginia (the "Mine 4 ARO"). The Company recorded these AROs at their estimated fair values and periodically adjusts them to reflect changes in the estimated present value resulting from the passage of time and revisions to the estimates of either the timing or amount of the reclamation costs. The Corbin ARO was included in Other long-term liabilities and the current portion of the Mine 4 ARO was included in Other current liabilities with the long-term portion included in Other long-term liabilities.

The Mine reclamation liabilities represent AROs and changes for the three months ended March 31, 2023 and year ended December 31, 2022 were as follows:

<i>(in thousands)</i>	As of	
	March 31, 2023	December 31, 2022
Asset retirement obligations, beginning of period	\$ 8,533	\$ 9,959
Asset retirement obligations assumed ⁽¹⁾	1,500	—
Accretion	168	611
Liabilities settled ⁽²⁾	(4,779)	(2,071)
Changes due to scope and timing of reclamation	—	34
Asset retirement obligations, end of period	5,422	8,533
Less current portion	163	548
Asset retirement obligations, long-term	\$ 5,259	\$ 7,985

(1) Represents two asset retirement obligations assumed as part of the Arq Acquisition; \$0.5 million related to Corbin ARO and \$1.0 million related to Mine 4 ARO.

(2) Represent the removal of the Marshall Mine ARO as a result of the MM Transaction as further discussed in Note 3.

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Notes to Condensed Consolidated Financial Statements
(Unaudited)

The following table details the components of "Interest expense" in the Condensed Consolidated Statement of Operations:

<i>(in thousands)</i>	Three Months Ended March 31,	
	2023	2022
Interest on Term Loan	\$ 261	\$ —
Interest on Arq Loan	98	—
Amortization of debt discounts and debt issuance costs	94	—
Other	81	86
	\$ 534	\$ 86

Note 10 - Equity Method Investments

Tinum Group, LLC

As of March 31, 2023 and December 31, 2022, the Company's ownership interest in Tinuum Group was 42.5%. For the three months ended March 31, 2023 and the three months ended March 31, 2022, the Company recognized earnings from Tinuum Group of \$0.6 million and \$1.0 million, respectively, which was comprised solely of cash distributions received during these periods.

In December 2022, the Company, certain of the other owners of Tinuum Group (collectively, the "Tinuum Group Owners") and Tinuum Group executed the Distribution and Repayment Agreement (the "Repayment Agreement"). Under the terms of the Repayment Agreement, the Tinuum Group Owners receive cash distributions (the "Distributions") equal to their percentage ownership and also are contractually liable for certain contingent liabilities of Tinuum Group (the "Tinuum Group Obligation") in amounts equal to their percentage ownership. In December 2022, the Company received its percentage share of the Distributions in the amount of \$2.0 million and became contractually liable for \$1.7 million of the Tinuum Group Obligation. As of March 31, 2023 and December 31, 2022, the Company' portion of the Tinuum Group Obligation is \$1.7 million and \$1.7 million, respectively and is included in the "Other current liabilities" line item in the Condensed Consolidated Balance Sheets. In the event that the Tinuum Group Obligation is discharged in its entirety or settled for an amount that is less than the total Tinuum Group Obligation, the Company will recognize future equity earnings for the difference in its portion of the Tinuum Group Obligation and its pro rata share of the actual payment made by Tinuum Group, if any, for the Tinuum Group Obligation.

In December 2022, the Company and Tinuum Group entered into an agreement (the "Tinuum Group Royalty Agreement") whereby the Company pays Tinuum Group a royalty (the "Tinuum Group Royalty") for certain of the Company's sales of its M-Prove™ products after the expiration of the Section 45 Tax Credit Program (beginning January 1, 2022) to certain of the former refined coal facilities owned by Tinuum Group and operated by Tinuum Services (the "M-45 Facilities"). The Tinuum Group Royalty is calculated based on "Net Profit" (as defined in the Tinuum Royalty Agreement) on the Company's sales of M-Prove™ product to certain of the M-45 Facilities. The Tinuum Group Royalty Agreement is for an initial term of five years with automatic renewals of five years unless the Company and Tinuum Group agree to terminate it.

For the three months ended March 31, 2023, the Company recognized \$0.2 million of Tinuum Group Royalties, which are included in the "Consumables cost of revenues, excluding depreciation and amortization" line item in the Consolidated Statement of Operations.

Tinum Services, LLC

As of March 31, 2023 and December 31, 2022, the Company has a 50% voting and economic interest in Tinuum Services and the carrying value of the equity investment in Tinuum Services was zero and zero, respectively. For the three months ended March 31, 2023 and the three months ended March 31, 2022, the Company recognized losses from Tinuum Services of zero and \$0.2 million, respectively.

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Cash Distributions

The following table details the components of the cash distributions from the Company's respective equity method investments included as a component of cash flows from operating activities and investing activities in the Condensed Consolidated Statements of Cash Flows. Distributions from equity method investees are reported in the Condensed Consolidated Statements of Cash Flows as "Distributions from equity method investees, return on investment" as a component of cash flows from operations until such time as the carrying value in an equity method investee company is reduced to zero. Thereafter, such distributions are reported as "Distributions from equity method investees in excess of cumulative earnings" as a component of cash flows from investing activities.

<i>(in thousands)</i>	Three Months Ended March 31,	
	2023	2022
Distributions from equity method investees, return on investment		
Tinum Services	\$ —	\$ 1,501
Tinum Group	—	—
	\$ —	\$ 1,501
Distributions from equity method investees in excess of investment basis		
Tinum Group	\$ 638	\$ 1,012
Other	—	1
	\$ 638	\$ 1,013

Note 11 - Stockholders' Equity

Arq Acquisition and PIPE Investment

On February 1, 2023, the Company issued 3,814,864 and 3,842,315 shares of its Common Stock pursuant to the Arq Acquisition and the PIPE Investment, respectively. In addition, the Company issued 5,294,462 Preferred Shares pursuant to the Arq Acquisition, which is classified and presented outside of Stockholders' Equity as Redeemable preferred stock in the Consolidated Balance Sheet as of March 31, 2023.

As consideration for the Term Loan, the Company issued 325,857 Warrant Shares, which were deemed to be equity securities and were recorded at their estimated fair value of \$0.8 million to Additional paid in capital, with a corresponding amount recorded as debt discount on the Term Loan.

Dividend

On March 31, 2023, the Company declared a dividend of 68,464 Series A PIK Shares with respect to the accrued dividends on the Series A Preferred Stock for the first quarter of 2023 (the "First Quarter PIK Dividend"). The First Quarter PIK Dividend was recorded at the estimated fair value of \$0.2 million as of March 31, 2023 and was paid on April 21, 2023.

Stock Repurchase Program

As of March 31, 2023, the Company had \$7.0 million remaining under a stock repurchase program, which will remain in effect until all amounts are utilized or is otherwise modified by the Board.

Tax Asset Protection Plan

U.S. federal income tax rules, and Section 382 of the Internal Revenue Code in particular, could substantially limit the use of net operating losses and tax credits if the Company experiences an "ownership change" (as defined in the Internal Revenue Code). In general, an ownership change occurs if there is a cumulative change in the ownership of the Company by "5 percent stockholders" that exceeds 50 percentage points over a rolling three-year period.

An entity that experiences an ownership change generally will be subject to an annual limitation on its pre-ownership change tax loss and credit carryforwards equal to the equity value of the entity immediately before the ownership change, multiplied by the long-term, tax-exempt rate posted monthly by the Internal Revenue Service (subject to certain adjustments). The annual limitation would be increased each year to the extent that there is an unused limitation in a prior year.

Advanced Emissions Solutions, Inc. and Subsidiaries
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On May 5, 2017, the Board approved the declaration of a dividend of rights to purchase Series B Junior Participating Preferred Stock for each outstanding share of common stock as part of a tax asset protection plan (the "TAPP"), which is designed to protect the Company's ability to utilize its net operating losses and tax credits. The TAPP is intended to act as a deterrent to any person acquiring beneficial ownership of 4.99% or more of the Company's outstanding common stock.

On April 11, 2023, the Board approved the Sixth Amendment to the TAPP (the "Sixth Amendment"), which amends the TAPP, as previously amended by the First, Second, Third, Fourth and Fifth Amendments that were approved the Board on April 6, 2018, April 5, 2019, April 9, 2020, April 9, 2021 and March 15, 2022, respectively. The Sixth Amendment amends the definition of "Final Expiration Date" under the TAPP to extend the duration of the TAPP and makes associated changes in connection therewith. Pursuant to the Sixth Amendment, the Final Expiration Date shall be the close of business on the earlier of (i) December 31, 2024 or (ii) December 31, 2023 if stockholder approval of the Sixth Amendment has not been obtained prior to such date.

Note 12 - Stock-Based Compensation

The Company grants equity-based awards to employees, non-employee directors and consultants that may include, but are not limited to, RSAs, PSUs, restricted stock units and stock options. Stock-based compensation expense related to manufacturing employees and administrative employees is included within the "Cost of revenue" and "Payroll and benefits" line items, respectively, in the Condensed Consolidated Statements of Operations. Stock-based compensation expense related to non-employee directors and consultants is included within the "General and administrative" line item in the Condensed Consolidated Statements of Operations.

Total stock-based compensation expense for the three months ended March 31, 2023 and 2022 was as follows:

<i>(in thousands)</i>	Three Months Ended March 31,	
	2023	2022
RSA expense	\$ 488	\$ 427
PSU expense	75	37
Total stock-based compensation expense	\$ 563	\$ 464

The amount of unrecognized compensation cost as of March 31, 2023, and the expected weighted-average period over which the cost will be recognized is as follows:

<i>(in thousands, expect years)</i>	As of March 31, 2023	
	Unrecognized Compensation Cost	Expected Weighted-Average Period of Recognition (in years)
RSA expense	\$ 2,897	2.45
PSU expense	485	2.49
Total unrecognized stock-based compensation expense	\$ 3,382	2.46

Restricted Stock

Restricted stock is typically granted with vesting terms of three years. The fair value of RSAs is determined based on the closing price of the Company's common stock on the authorization date of the grant multiplied by the number of shares subject to the stock award. Compensation expense for RSAs is generally recognized on a straight-line basis over the entire vesting period.

Advanced Emissions Solutions, Inc. and Subsidiaries
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A summary of RSA activity under the Company's various stock compensation plans for the three months ended March 31, 2023 is presented below:

	<u>Restricted Stock</u>	<u>Weighted-Average Grant Date Fair Value</u>
Non-vested at January 1, 2023	652,962	\$ 5.58
Granted	498,541	\$ 1.97
Vested	(237,185)	\$ 5.67
Forfeited	(15,299)	\$ 5.45
Non-vested at March 31, 2023	<u>899,019</u>	<u>\$ 3.55</u>

Performance Share Units

Compensation expense is recognized for PSUs on a straight-line basis over the applicable service period, which is generally three years, based on the estimated fair value at the date of grant using a Monte Carlo simulation model. A summary of PSU activity for the three months ended March 31, 2023 is presented below:

	<u>Units</u>	<u>Weighted-Average Grant Date Fair Value</u>	<u>Aggregate Intrinsic Value (in thousands)</u>	<u>Weighted-Average Remaining Contractual Term (in years)</u>
PSUs outstanding, January 1, 2023	148,591	\$ 7.85		
Granted	231,242	2.48		
Vested / Settled ⁽¹⁾	(41,855)	6.17		
Forfeited / Canceled	—	—		
PSUs outstanding, March 31, 2023	<u>337,978</u>	<u>\$ 4.38</u>	<u>\$ 669</u>	<u>2.49</u>

(1) The number of units shown in the table above are based on target performance. The final number of shares of common stock issued may vary depending on the achievement of market conditions established within the awards, which could result in the actual number of shares issued ranging from zero to a maximum of two times the number of units shown in the above table. For the three months ended March 31, 2023, no shares of common stock were issued upon vesting of PSUs.

Note 13 - Income Taxes

For the three months ended March 31, 2023 and 2022, the Company's income tax expense and effective tax rates were:

<i>(in thousands, except for rate)</i>	<u>Three Months Ended March 31,</u>	
	<u>2023</u>	<u>2022</u>
Income tax benefit	\$ 33	\$ —
Effective tax rate	— %	— %

The Company incurred pretax loss for the three months ended March 31, 2023 and expects to incur pretax loss for the year ending December 31, 2023. As a result, the effective rate for the three months ended March 31, 2023 was zero as the resultant tax benefit was offset by a valuation allowance recorded as of March 31, 2023.

The Company assesses a valuation allowance recorded against deferred tax assets at each reporting date. The determination of whether a valuation allowance for deferred tax assets is appropriate requires the evaluation of positive and negative evidence that can be objectively verified. Consideration must be given to all sources of taxable income available to realize deferred tax assets, including, as applicable, the future reversal of existing temporary differences, future taxable income forecasts exclusive of the reversal of temporary differences and carryforwards, taxable income in carryback years and tax planning strategies. In estimating income taxes, the Company assesses the relative merits and risks of the appropriate income tax treatment of transactions taking into account statutory, judicial and regulatory guidance.

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

The following discussion and analysis of our financial condition and results of our operations should be read together with the unaudited Condensed Consolidated Financial Statements and notes of Advanced Emissions Solutions, Inc. ("ADES" or the "Company") included elsewhere in Item 1 of Part I ("Item 1") of this Quarterly Report and with the audited consolidated financial statements and the related notes of ADES included in the 2022 Form 10-K.

The results of operations discussed in this "Management's Discussion and Analysis of Financial Condition and Results of Operations" are those of ADES and its consolidated subsidiaries, collectively, the "Company," "we," "our" or "us."

Overview

We are an environmental technology company that sells consumable products that utilize AC and chemical-based technologies to a broad range of customers, including coal-fired utilities, industrials, water treatment plants, and other diverse markets served by one of our major customers. Our primary products are comprised of AC, which is produced from a variety of carbonaceous raw materials. Our AC products include both powdered activated carbon ("PAC") and granular activated carbon ("GAC"). Our proprietary technologies and associated product offerings provide purification solutions to enable our customers to reduce certain contaminants and pollutants to meet the challenges of existing and potential future regulations. Additionally, we own an associated lignite mine which supplies the primary raw material for the manufacturing of our current products.

Acquisition

On February 1, 2023 (the "Acquisition Date"), we completed the Arq Acquisition in exchange for the Purchase Consideration of \$31.2 million, which consisted of (i) 3,814,864 shares of the Company's common stock, par value \$0.001 per share (the "Common Stock") and (ii) 5,294,462 shares (the "Preferred Shares") of the Company's Series A Convertible Preferred Stock, par value \$0.001 per share (the "Series A Preferred Stock").

Loan Agreement

On February 1, 2023, we and CF Global ("CFG"), a related party, as administrative agent and lender (the "Lender"), entered into a term loan (the "Term Loan") in the amount of \$10.0 million, less original issue discount of \$0.2 million. The Term Loan has a term of 48 months and bears interest at a rate equal to either (a) Adjusted Term SOFR (subject to a 1.00% floor and a cap of 2.00%) plus a margin of 9.00% paid in cash and 5.00% paid in kind or (b) Base Rate plus a margin of 8.00% paid in cash and 5.00% paid in kind, which interest on the Term Loan in each case is payable (or capitalized, in the case of in kind interest) quarterly in arrears. The Term Loan is secured by substantially all of the assets of ADES and its subsidiaries (including those acquired in the Acquisition), subject to customary exceptions. We incurred issuance costs of \$1.3 million associated with the Loan Agreement.

The Loan Agreement also provided for the issuance of the Warrant to CFG to purchase 325,457 shares of Common Stock, which represents 1% of the post-Arq Acquisition and PIPE Investment (as defined below) fully diluted share capital (as defined in the Loan Agreement), at an exercise price of \$0.01 per share. The Warrant has a term of 7 years and contains a cashless exercise provision.

Equity Financing

Also on February 1, 2023, we and the Subscribers, which included existing shareholders of Arq Ltd., entered into the PIPE Investment for the purchase of 3,842,315 shares of Common Stock for an aggregate purchase price of \$15.4 million and at a price per share of \$4.00.

Drivers of Demand and Key Factors Affecting Profitability

Drivers of demand and key factors affecting our profitability are sales of our consumables-based solutions for coal-fired power generation, industrials, municipal water customers and other diverse markets served by one of our major customers. Our operating results are influenced by: (1) changes in our manufacturing production and sales volumes; (2) changes in price and product mix; (3) changes in coal-fired dispatch and electricity power generation sources and (4) changes in demand for contaminant removal within water treatment facilities.

For the three months ended March 31, 2023, we experienced a decrease in demand for our product from certain coal-fired dispatch and electricity power generation customers. This was primarily due to unexpectedly low natural gas prices, resulting in certain customers opting to use natural gas versus coal for power generation, and abnormally warm temperatures during the majority of the winter season, resulting in less demand for power generation. We expect that natural gas prices will remain at current lows through 2023, and we expect this will significantly and negatively impact sales of our product. Further, lower average temperatures in the spring and summer season would also negatively impact sales of our product.

Marshall Mine

On March 27, 2023, we closed the sale of Marshall Mine, LLC and we remitted a cash payment to the Buyer in the amount of \$2.2 million in connection with the sale. As of March 27, 2023, Marshall Mine, LLC had outstanding liabilities of approximately \$4.9 million that were discharged upon the closing, and as a result, we recognized a gain of approximately \$2.7 million for the three months ended March 31, 2023.

Results of Operations

For the three months ended March 31, 2023, we recognized net loss of \$7.5 million, compared to net loss of \$3.0 million for the three months ended March 31, 2022. The most significant factors impacting results period over period were increased expenses related to the Arq Acquisition as well as the decrease in demand for our AC and chemical products related to power generation as a result of prices of alternative energy sources.

The following sections provide additional information regarding these comparable periods. For comparability purposes, the following tables set forth our results of operations for the periods presented in the Condensed Consolidated Financial Statements included in Item 1 of this Quarterly Report. The current year period to prior year period comparisons of financial results may not be indicative of financial results to be achieved in future periods.

Comparison of the Three Months Ended March 31, 2023 and 2022

Total Revenue and Cost of Revenue

A summary of the components of our revenues and cost of revenue for the three months ended March 31, 2023 and 2022 is as follows:

<i>(in thousands, except percentages)</i>	Three Months Ended March 31,		Change	
	2023	2022	(\$)	(%)
Revenues:				
Consumables	\$ 20,805	\$ 26,402	\$ (5,597)	(21)%
Total revenues	\$ 20,805	\$ 26,402	\$ (5,597)	(21)%
Operating expenses:				
Consumables cost of revenue, exclusive of depreciation and amortization	\$ 17,175	\$ 21,507	\$ (4,332)	(20)%

Consumables and consumables cost of revenue

For the three months ended March 31, 2023, consumables revenues decreased from the comparable quarter in 2022 primarily driven by a decrease in volumes sold, which comprised \$5.9 million of the total change. Product volumes were lower among power generation customers primarily due to low natural gas prices compared to the same quarter in 2022, which contributed to decreased utilization of coal-fired generation and decreased demand for our products. The average natural gas spot prices (\$MMBtu) for the three months ended March 31, 2023 and 2022 were \$2.65 and \$4.66, respectively. Total consumables revenues also decreased for the three months ended March 31, 2023 by approximately \$1.0 million from the comparable quarter due to unfavorable product mix. Offsetting these decreases to Consumables revenues were overall higher pricing of our products by approximately \$1.6 million from the comparable quarter in 2022.

Consumables gross margin, exclusive of depreciation and amortization, decreased for the three months ended March 31, 2023, compared to the comparable quarter in 2022. Driving the decrease in gross margin quarter over quarter were sales volume changes as discussed above, higher prices for key raw materials, transportation, including fuel, and other operational costs to produce and deliver our products and a negative impact from net electricity generated. Offsetting these negative impacts was an increase in the prices of our products, most of which were in place as of the beginning of April 2022.

For 2023, and based on current market estimates, we believe there will be a slight increase in Consumables revenue in the second half of 2023 compared to the first half of 2023, driven by changes to customer and product mix, and overall improvements in pricing. However, we expect to see slight decreases in volumes compared to 2022 due to prices of alternative energy sources impacting the demand for our AC and chemical products related to power generation. There is risk to our volumes outlook driven by inflationary pressures that may increase our overall operating costs for our manufacturing operations as well as the impact of the 2023 Red River Plant turnaround.

Consumables revenues continues to be affected by electricity demand driven by seasonal weather and related power generation needs, as well as competitor prices related to alternative power generation sources such as natural gas and renewables.

Other Operating Expenses

A summary of the components of our operating expenses for the three months ended March 31, 2023 and 2022, exclusive of cost of revenue items (presented above), is as follows:

<i>(in thousands, except percentages)</i>	Three Months Ended March 31,		Change	
	2023	2022	(\$)	(%)
Operating expenses:				
Payroll and benefits	\$ 4,699	\$ 2,626	\$ 2,073	79 %
Legal and professional fees	4,538	2,172	2,366	109 %
General and administrative	2,778	1,926	852	44 %
Depreciation, amortization, depletion and accretion	2,137	1,506	631	42 %
Gain on sale of Marshall Mine, LLC	(2,695)	—	(2,695)	*
	<u>\$ 11,457</u>	<u>\$ 8,230</u>	<u>\$ 3,227</u>	<u>39 %</u>

* Calculation not meaningful.

Payroll and benefits

Payroll and benefits expenses, which represent costs related to selling, general and administrative personnel, increased for the three months ended March 31, 2023 compared to the corresponding quarter in 2022 primarily due to the addition of Arq employees, which increased expenses by \$2.2 million, of which \$1.3 million related to severance expense of former executives of Arq. These increases were offset by a decrease in expense relate to retention agreements with our executive officers and certain other key employees of \$0.3 million, as these bonuses were paid in January 2023.

Legal and professional fees

Legal and professional fees increased for the three months ended March 31, 2023 compared to the corresponding quarter in 2022 as a result of an increase in costs incurred related to the Arq Acquisition, and was comprised mostly of legal and consulting fees. For the three months ended March 31, 2023, \$2.4 million of legal and professional fees related to non-recurring transactions costs incurred as a result of the Arq Acquisition.

General and administrative

General and administrative expenses increased for the three months ended March 31, 2023 compared to the corresponding quarter in 2022 as a result of \$0.6 million expenses incurred by Arq for quarter, which includes \$0.3 million related to rent and occupancy expense from additional leased space. Additional increases of approximately \$0.3 million quarter over quarter related to increases in travel, recruiting and Board compensation, as three new board members were added to our Board in connection with the Arq Acquisition.

Depreciation, amortization, depletion and accretion

Depreciation and amortization expense increased for the three months ended March 31, 2023 compared to the corresponding quarter in 2022 primarily due to depreciation and amortization of approximately \$0.6 million from the addition of long-lived assets and intangible assets acquired as part of the Arq Acquisition.

Gain on sale of Marshall Mine, LLC

As discussed above, for the three months ended March 31, 2023, we recognized a gain of \$2.7 million on the sale of Marshall Mine, LLC.

Other Income (Expense), net

A summary of the components of other income (expense), net for the three months ended March 31, 2023 and 2022 is as follows:

<i>(in thousands, except percentages)</i>	Three Months Ended March 31,		Change	
	2023	2022	(\$)	(%)
Other income (expense):				
Earnings from equity method investments	\$ 638	\$ 833	\$ (195)	(23)%
Interest expense	(534)	(86)	(448)	521 %
Other	182	(445)	627	(141)%
Total other income	<u>\$ 286</u>	<u>\$ 302</u>	<u>\$ (16)</u>	<u>(5)%</u>

Earnings from equity method investments

Earnings from equity method investments for the three months ended March 31, 2023 and 2022 represented cash distributions. The decrease was primarily due to Tinum Group and Tinum Services continuing to wind down their services into 2023.

Additional information related to equity method investments is included in Note 10 to the Condensed Consolidated Financial Statements included in Item 1 of this Report.

Interest expense

Interest expense increased for the three months ended March 31, 2023 compared to the corresponding quarter in 2022 due to interest expense of \$0.3 million related to the Term Loan, which was entered into on February 1, 2023 in connection with the Arq Acquisition. Additional interest expense of \$0.1 million related to the Arq Loan, which we assumed as result of the Arq Acquisitions.

Income tax expense

For three months ended March 31, 2023, we had pretax loss of \$7.5 million and recorded income tax benefit related to out-of-period state income tax refunds received during the quarter. We recorded no additional income tax benefit for this quarter due to the recording of a full valuation allowance based on our forecast of pretax loss for the year ending December 31, 2023. For the three months ended March 31, 2022, we had pretax loss of \$3.0 million and recorded no income tax benefit due to the recording of a full valuation allowance based on our forecast of pretax loss for the year ended December 31, 2022.

Non-GAAP Financial Measures

To supplement our financial information presented in accordance with U.S. GAAP (or "GAAP"), we provide non-GAAP measures of certain financial performance. These non-GAAP measures include EBITDA (EBITDA Loss) and Adjusted EBITDA (Adjusted EBITDA Loss). We have included these non-GAAP measures because management believes that they help to facilitate period to period comparisons of our operating results and provide useful information to both management and users of the financial statements by excluding certain expenses, gains and losses which may not be indicative of core operating results and business outlook. Management uses these non-GAAP measures in evaluating the performance of our business.

These non-GAAP measures are not in accordance with, or an alternative to, measures prepared in accordance with GAAP and may be different from non-GAAP measures used by other companies. In addition, these non-GAAP measures are not based on any comprehensive set of accounting rules or principles. These measures should only be used to evaluate our results of operations in conjunction with the corresponding GAAP measures.

We define EBITDA (EBITDA Loss) as net income (loss) adjusted for the impact of the following items that are either non-cash or that we do not consider representative of our ongoing operating performance: depreciation, amortization, depletion, accretion, amortization of upfront customer consideration ("Upfront Customer Consideration"), interest expense, net and income taxes. We define Adjusted EBITDA (Adjusted EBITDA Loss) as EBITDA (EBITDA Loss), reduced by the non-cash impact of equity earnings from equity method investments and gain on sale of Marshall Mine, LLC, increased by cash distributions from equity method investments and loss on early settlement of a long-term receivable. Because Consolidated Adjusted EBITDA omits certain non-cash items, we believe that the measure is less susceptible to variances that affect our operating performance.

When used in conjunction with GAAP financial measures, we believe these non-GAAP measures are supplemental measures of operating performance which explain our operating performance for our period-to-period comparisons and against our competitors' performance. Generally, we believe these non-GAAP measures are less susceptible to variances that affect our operating performance results.

We expect the adjustments to Consolidated EBITDA and Consolidated Adjusted EBITDA in future periods will be generally similar. These non-GAAP measures have limitations as analytical tools and should not be considered in isolation or as a substitute for analyzing our results as reported under GAAP.

Consolidated EBITDA and Adjusted EBITDA

<i>(in thousands)</i>	Three Months Ended March 31,	
	2023	2022
Net loss ⁽¹⁾	\$ (7,508)	\$ (3,033)
Depreciation, amortization, depletion and accretion	2,137	1,506
Amortization of Upfront Customer Consideration	127	127
Interest expense, net	289	64
Income tax benefit	(33)	—
(EBITDA loss)	(4,988)	(1,336)
Cash distributions from equity method investees	638	2,514
Equity earnings	(638)	(833)
Gain on sale of Marshall Mine, LLC	(2,695)	—
Loss on early settlement of long-term receivable	—	535
(Adjusted EBITDA loss) Adjusted EBITDA	\$ (7,683)	\$ 880

(1) Included in Net loss for the three months ended March 31, 2023 and 2022, is \$4.4 million and \$0.8 million, respectively, of transactions and integration costs incurred related to the Arq Acquisition. Additionally, for the three months ended March 31, 2023, Net loss included \$0.9 million of Arq payroll and benefit costs.

Liquidity and Capital Resources

Current Resources and Factors Affecting Our Liquidity

As of March 31, 2023, our principal sources of liquidity included:

- cash on hand, excluding restricted cash of \$10.0 million pledged as collateral under a surety bond agreement; and
- our operations.

As of March 31, 2023, our principal uses of liquidity included:

- our business operating expenses;
- capital and spare parts expenditures;
- payments on our lease obligations;
- payments on our debt obligations; and
- payments of AROs associated with the Five Forks Mine.

Cash Flows

Three Months Ended March 31, 2023 vs. Three Months Ended March 31, 2022

Cash and restricted cash increased from \$76.4 million as of December 31, 2022 to \$79.1 million as of March 31, 2023. The following table summarizes our cash flows for the three months ended March 31, 2023 and 2022, respectively:

(in thousands)	Three Months Ended March 31,		Change
	2023	2022	
Cash and restricted cash provided by (used in):			
Operating activities	\$ (17,705)	\$ 2,094	\$ (19,799)
Investing activities	(2,897)	(439)	(2,458)
Financing activities	23,260	(628)	23,888
Net change in cash and restricted cash	<u>\$ 2,658</u>	<u>\$ 1,027</u>	<u>\$ 1,631</u>

Cash flow from operating activities

Cash flows used in operating activities for the three months ended March 31, 2023 decreased by \$19.8 million compared to the three months ended March 31, 2022. The net decrease was primarily attributable to net loss of \$7.5 million recognized for the three months ended March 31, 2023 compared to net loss of \$3.0 million recognized for the three months ended March 31, 2022; the add-back of a non-cash gain of \$2.7 million recognized from the sale of Marshall Mine, LLC for the three months ended March 31, 2023; a decrease in accounts payable and accrued expenses of \$10.8 million, primarily from payments of Arq assumed liabilities comprised of accrued employee-related compensation and accrued transaction costs associated with the Arq Acquisition; payment of the balance of the Retention Bonuses; and a decrease in Distributions from equity method investees, return on investment of \$1.5 million. Offsetting the net decrease in cash flows provided by operating activities for the three months ended March 31, 2023 compared to the three months ended March 31, 2022 were an increase in net working capital, excluding accounts payable and accrued expenses, of \$3.5 million, a decrease in Earnings from equity method investments of \$0.2 million, and a decrease in Other long-term assets, net of \$3.6 million, primarily from the payment received from settlement on a long-term receivable in the prior period.

Cash flow from investing activities

Cash flows used in investing activities increased for the three months ended March 31, 2023 compared to the three months ended March 31, 2022 by \$2.5 million primarily as a result of an increase in property, plant and equipment additions of \$2.2 million and the sale of Marshall Mine, LLC, which required a cash payment of \$2.2 million. Additionally, distributions from equity earnings in excess of cumulative earnings decreased \$0.4 million quarter over quarter. Offsetting the net increase in cash flows used in investing activities was \$2.2 million of cash acquired in the Arq Acquisition.

Cash flow from financing activities

Cash flows provided by financing activities for the three months ended March 31, 2023 compared to the three months ended March 31, 2022 increased by \$23.9 million primarily due to the net borrowings, net of debt issuance costs paid, of \$8.5 million on the Term Loan and net proceeds from the PIPE Investment of \$15.2 million.

Material Cash Requirements

With the Arq Acquisition, we have assumed liabilities, including the Arq Loan, that will increase our cash requirements for the next 12 months and beyond. In addition, our success with the Arq acquisition will require significant capital expenditures as quantified below. With the execution of the Term Loan in February 2023, we are required to make quarterly interest payments beginning in March 2023 through February 2027, and a balloon payment of principal and PIK interest totaling approximately \$12.4 million on the expiration date of the Term Loan. We expect that our cash on hand as of March 31, 2023 will provide sufficient liquidity to fund our required contractual obligations due and operating loss incurred for the next 12 months.

Capital Expenditures

For 2023, we expect to incur between \$40.0 million and \$45.0 million in capital expenditures, including:

- Between \$13.0 million and \$15.0 million is forecast for capital improvements at the Red River Plant related to scheduled maintenance improvements and to complete current capital projects; and
- Between \$27.0 million and \$30.0 million is forecast for growth capital for the modification of the both the Red River Plant and Corbin Plant in order to incorporate Arq Powder as feedstock.

We expect to fund all capital expenditures for 2023 from cash on hand.

Surety Bonds and Mine Obligations

As of March 31, 2023, we had outstanding surety bonds with regulatory commissions totaling \$7.5 million related to reclamation of the Five Forks Mine. As of March 31, 2023, and as required by our surety bond provider, we also held restricted cash of \$10.0 million pledged as collateral for such surety bonds related to the Five Forks Mine and other surety obligations. Prior to March 31, 2023, and as a result of the sale of Marshall Mine, LLC, we reduced our surety bonds by \$16.6 million in discharge of all future obligations for reclamation of the Marshall Mine. Subsequent to March 31, 2023, we reduced our required restricted cash to \$7.7 million.

As March 31, 2023, we had outstanding surety bonds with a regulatory commission totaling \$3.0 million for reclamation obligations of the land adjacent to the Corbin Facility.

We expect that the obligations secured by these surety bonds associated with Five Forks will be performed in the ordinary course of business and in accordance with the applicable contractual terms. To the extent that the obligations are performed, the related surety bonds should be released and collateral requirements reduced. However, in the event any surety bond is called, our indemnity obligations could require us to reimburse the surety bond provider. We intend to fund our mine reclamation costs associated with the Five Forks Mine from cash on hand.

Critical Accounting Policies and Estimates

Our critical accounting policies and estimates have not changed from those reported in Item 7 - "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the 2022 Form 10-K.

Recently Issued Accounting Standards

Refer to Note 1 of the Condensed Consolidated Financial Statements included in Item 1 of this Quarterly Report for information regarding recently issued accounting standards applicable to us.

Forward-Looking Statements Found in this Report

This Quarterly Report contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act") that involve risks and uncertainties. In particular such forward-looking statements are found in this Part I and under the heading in Part II, Item 7 below. Words or phrases such as "anticipates," "believes," "expects," "intends," "plans," "estimates," "predicts," the negative expressions of such words, or similar expressions are used in this Report to identify forward-looking statements, and such forward-looking statements include, but are not limited to, statements or expectations regarding:

- (a) the anticipated effects from an increase in pricing of our AC products;
- (b) the anticipated effects from an increase in costs of our AC products and related cost increases in supply and logistics;
- (c) expected supply and demand for our AC products and services;
- (d) increasing competition in the AC market;
- (e) the effects of the Arq Acquisition;

- (f) the ability to successfully integrate Arq's business;
- (g) the ability to develop and utilize Arq's products and technology;
- (h) the ability to make Arq's products commercially viable;
- (i) the expected future demand of Arq's products;
- (j) future level of research and development activities;
- (k) future plant capacity expansions and site development projects;
- (l) the effectiveness of our technologies and the benefits they provide;
- (m) probability of any loss occurring with respect to certain guarantees made by Tinnuum Group;
- (n) the timing of awards of, and work and related testing under, our contracts and agreements and their value;
- (o) the timing and amounts of or changes in future revenues, backlog, funding for our business and projects, margins, expenses, earnings, tax rates, cash flows, royalty payment obligations, working capital, liquidity and other financial and accounting measures;
- (p) the amount of future capital expenditures needed for our APT business and Arq to fund our business plan;
- (q) awards of patents designed to protect our proprietary technologies both in the U.S. and other countries;
- (r) the adoption and scope of regulations to control certain chemicals in drinking water and other environmental concerns;
- (s) the impact of adverse global macroeconomic conditions, including rising interest rates, recession fears and inflationary pressures, and geopolitical events or conflicts;
- (t) opportunities to effectively provide solutions to U.S. coal-related businesses to comply with regulations, improve efficiency, lower costs and maintain reliability;
- (u) the impact of prices of competing power generation sources such as natural gas and renewable energy on demand for our products; and
- (v) bank failures or other events affecting financial institutions.

The forward-looking statements included in this Quarterly Report involve risks and uncertainties. Actual events or results could differ materially from those discussed in the forward-looking statements as a result of various factors including, but not limited to, timing of new and pending regulations and any legal challenges to or extensions of compliance dates of them; the U.S. government's failure to promulgate regulations that benefit our business; changes in laws and regulations, accounting rules, prices, economic conditions and market demand; impact of competition; availability, cost of and demand for alternative energy sources and other technologies; technical, start up and operational difficulties; our inability to commercialize our APT technologies on favorable terms; our inability to ramp up our operations to effectively address recent and expected growth in our business; loss of key personnel; availability of materials and equipment for our business; intellectual property infringement claims from third parties; pending litigation; as well as other factors relating to our business strategy, goals and expectations concerning the Arq Acquisition (including future operations, future performance or results); the effect of the Arq Acquisition on our ability to hire key personnel; our ability to maintain relationships with customers, suppliers and other with whom we do business, or our results of operations and business generally; risks related to diverting management's attention from our ongoing business operations; the ability to meet Nasdaq's listing standards following the consummation of the Arq Acquisition; costs related to the Arq Acquisition; opportunities for additional sales of our lignite AC products and end-market diversification; our ability to meet customer supply requirements; the rate of coal-fired power generation in the U.S., as described in our filings with the SEC, with particular emphasis on the risk factor disclosures contained in those filings. You are cautioned not to place undue reliance on the forward-looking statements made in this Quarterly Report and to consult filings we have made and will make with the SEC for additional discussion concerning risks and uncertainties that may apply to our business and the ownership of our securities. The forward-looking statements contained in this Quarterly Report are presented as of the date hereof, and we disclaim any duty to update such statements unless required by law to do so.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

The information under this Item is not required to be provided by smaller reporting companies.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(b) under the Exchange Act, we have evaluated, under the supervision of and with the participation of our management, including our principal executive officer and principal financial officer, the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Based upon this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of March 31, 2023.

Changes in Internal Control Over Financial Reporting

On February 1, 2023, we acquired Arq and excluded their business from our assessment of internal control over financial reporting as of March 31, 2023, as allowed under general guidance issued by the Staff of the Securities and Exchange Commission. There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal quarter ended March 31, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. The Company is evaluating the impacts of the Arq Acquisition to our internal control over financial reporting as allowed under general guidance issued by the Staff of the Securities and Exchange Commission.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we are involved in litigation, claims and other proceedings related to the conduct of our business. Information with respect to this item may be found in Note 8 "Commitments and Contingencies" to the consolidated financial statements included in Item 1 of Part I of this Quarterly Report.

Item 1A. Risk Factors

There are no material updates to our risk factors as disclosed in the 2022 Form 10-K except as described below.

Bank failures or other events affecting financial institutions could have a material adverse effect on our business, results of operations or financial condition, or have other adverse consequences.

We primarily use one U.S. bank for our operations. The majority of our cash deposits are held by this bank and exceed the Federal Deposit Insurance Corporation ("FDIC") insurance limits. The failure of this bank or events involving limited liquidity, non-performance or other adverse conditions in the financial or credit markets impacting this bank, or concerns or rumors about such events, may lead to disruptions in access to our cash balances, adversely impact our liquidity or limit our ability to process transactions related to our customers. In the event of a failure of this bank, there can be no assurance that our deposits in excess of the FDIC or other comparable insurance limits will be recoverable or, even if ultimately recoverable, there may be significant delays in our ability to access those funds. Furthermore, bank failures, non-performance, or other adverse developments that affect other financial institutions could impair the ability of this bank to honor its commitments. Such events could have a material adverse effect on our financial condition or results of operations.

Similarly, our customers may be adversely affected by any bank failure or other event affecting financial institutions. If our customers are unable, or if our customers in the future are unable, to meet their obligations to us as a result of a bank failure or other event affecting financial institutions, we may be exposed to potential risks that could impact our financial condition or results of operations. Furthermore, a significant change in the liquidity or financial position of our customers could cause unfavorable trends in cash collections, which could have a material adverse effect on our financial condition or results of operations.

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

On February 1, 2023, we entered into Subscription Agreements (the "Subscription Agreements") with certain persons (the "Subscribers"), which included existing shareholders of Arq Ltd., three of which were appointed to our Board of Directors, pursuant to which the Subscribers subscribed for and purchased shares of our common stock for an aggregate purchase price of \$15.4 million and at a price per share of \$4.00 (such transaction, the "PIPE Investment").

The securities issued to the Subscribers under the Subscription Agreements were issued pursuant to an exemption from registration under Section 4(a)(2) of the Securities Act, Rule 506 of Regulation D, which is promulgated thereunder, and Regulations S of the Securities Act. We are relying on this exemption from registration based in part on representations made by each of the Subscribers under the Subscription Agreements. The sale of the securities pursuant to the Subscription Agreements has not been registered under the Securities Act or any state securities laws. The securities may not be offered or sold in the United States absent registration or an applicable exemption from registration requirements.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

The statement concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K is included in Exhibit 95.1 to this Quarterly Report.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit No.	Description	Form	File No.	Incorporated by Reference Exhibit	Filing Date
10.1	<u>Securities Purchase Agreement, dated as of February 1, 2023, by and among Advanced Emissions Solutions, Inc. and Arg Limited**</u>	8-K	001-37822	2.1	February 1, 2023
10.2	<u>Registration Rights Agreement**</u>	8-K	001-37822	10.1	February 1, 2023
10.3	<u>Term Loan and Security Agreement among Advanced Emissions Solutions, Inc., as Debtor, Certain Subsidiaries of Debtor, as Guarantors, CF Global Credit, LP, as Administrative Agent, and the Lenders, from time to time party hereto, dated as of February 1, 2023**</u>	8-K	001-37822	10.2	February 1, 2023
31.1	<u>Certification of Principal Executive Officer of Advanced Emissions Solutions, Inc. Pursuant to 17 CFR 240.13a-14(a) or 17 CFR 240.15d-14(a)*</u>				
31.2	<u>Certification of Principal Financial Officer of Advanced Emissions Solutions, Inc. Pursuant to 17 CFR 240.13a-14(a) or 17 CFR 240.15d-14(a)*</u>				
32.1	<u>Certification of Principal Executive Officer and Principal Financial Officer of Advanced Emissions Solutions, Inc. Pursuant to 18 U.S.C Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*</u>				
95.1	<u>Mine Safety Disclosure Exhibit*</u>				
101.SCH	XBRL Schema Document*				
101.CAL	XBRL Calculation Linkbase Document*				
101.LAB	XBRL Label Linkbase Document*				
101.PRE	XBRL Presentation Linkbase Document*				
101.DEF	Taxonomy Extension Definition Linkbase Document*				
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)*				

Notes:

* Filed herewith.

** Portions of this exhibit have been omitted pursuant to a request for confidential treatment.

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.

Advanced Emissions Solutions, Inc.
(Registrant)

May 9, 2023

By: /s/ Greg Marken
Greg Marken
Chief Executive Officer
(Principal Executive Officer)

May 9, 2023

By: /s/ Morgan Fields
Morgan Fields
Chief Accounting Officer
(Principal Financial Officer)

Pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as Amended

I, Greg Marken, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Advanced Emissions Solutions, 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: May 9, 2023

/s/ Greg Marken

Greg Marken

Chief Executive Officer

(Principal Executive Officer)

Pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as Amended

I, Morgan Fields, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Advanced Emissions Solutions, 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: May 9, 2023

/s/ Morgan Fields

Morgan Fields
Chief Accounting Officer
(Principal Financial Officer)

Certification

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 on Form 10-Q of Advanced Emissions Solutions, Inc. (the "Company") for the quarterly period ended March 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Greg Marken, as the Principal Executive Officer of the Company, and Morgan Fields, as the Principal Financial Officer of the Company, each hereby certifies, pursuant to and solely for the purpose of 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, to the best of his knowledge and belief, that:

- (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.

/s/ Greg Marken

Greg Marken
Chief Executive Officer

May 9, 2023

/s/ Morgan Fields

Morgan Fields
Chief Accounting Officer

May 9, 2023

Mine Safety and Health Administration Safety Data

We are committed to maintaining a safe work environment and working to ensure environmental compliance across all of our operations. The health and safety of our employees and limiting the impact to communities in which we operate are critical to our long-term success. We employ practices and conduct training to help ensure that our employees work safely. Furthermore, we utilize processes for managing, monitoring and improving safety and environmental performance.

The following disclosures are provided pursuant to Securities and Exchange Commission (SEC) regulations, which require certain disclosures by companies required to file periodic reports under the Securities Exchange Act of 1934, as amended, that operate coal mines regulated under the Federal Mine Safety and Health Act of 1977 (the "Mine Act"). The disclosures reflect United States (U.S.) mining operations only.

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

We are required to report citations and orders issued to us by MSHA during the three months ended March 31, 2023, as reflected in our systems. Our required disclosure covers only those mines that were issued orders or citations during the period presented and, commensurate with SEC regulations, does not reflect orders or citations issued to independent contractors working at our mines. Due to timing and other factors, our data may not agree with the mine data retrieval system maintained by MSHA. The proposed assessments for the three months ended March 31, 2023 were taken from the MSHA system as of May 4, 2023.

Additional information about MSHA references we are required to report is as follows:

- *Section 104 S&S Violations:* The total number of violations received from MSHA under section 104(a) of the Mine Act that could significantly and substantially contribute to a serious injury if left unabated.
- *Section 104(b) Orders:* The total number of orders issued by MSHA under section 104(b) of the Mine Act, which represents a failure to abate a citation under section 104(a) within the period of time prescribed by MSHA. This results in an order of immediate withdrawal from the area of the mine affected by the condition until MSHA determines that the violation has been abated.
- *Section 104(d) Citations and Orders:* The total number of citations and orders issued by MSHA under section 104(d) of the Mine Act for unwarrantable failure to comply with mandatory health or safety standards.
- *Section 104(e) Notices:* The total number of notices issued by MSHA under section 104(e) of the Mine Act for a pattern of violations that could contribute to mine health or safety hazards.
- *Section 110(b)(2) Violations:* The total number of flagrant violations issued by MSHA under section 110(b)(2) of the Mine Act.
- *Section 107(a) Orders:* The total number of orders issued by MSHA under section 107(a) of the Mine Act for situations in which MSHA determined an imminent danger existed.
- *Proposed MSHA Assessments:* The total dollar value of proposed assessments from MSHA.
- *Fatalities:* The total number of mining-related fatalities.

Our first mine is located in the Gulf Coast Lignite Region, in Natchitoches Parish, Louisiana (the "Five Forks Mine"). For the three months ended March 31, 2023, there were no reportable citations or orders issued to the Five Forks Mine. Our second mine is located in the Gulf Coast Lignite Region, in Harrison and Panola Counties, Texas (the "Marshall Mine"). We sold Marshall Mine on March 27, 2023. For the period from January 1, 2023 to March 27, 2023, there were no reportable citations or orders issued to the Marshall Mine.

We acquired two mines on February 1, 2023. The first mine acquired is located in Knox, Kentucky ("Corbin Project") and the second mine is located in Mingo, West Virginia (Mine Four). For the period from February 1, 2023 to March 31, 2023, there were no reportable citations or orders issued to the Corbin Project or Mine Four.

Pending Legal Actions. The Federal Mine Safety and Health Review Commission (the Commission) is an independent adjudicative agency that provides administrative trial and appellate review of legal disputes arising under the Mine Act. These cases may involve, among other questions, challenges by operators to citations, orders and penalties they have received from

MSHA, or complaints of discrimination by miners under section 105 of the Mine Act. The following is a brief description of the types of legal actions that may be brought before the Commission.

- *Contests of Citations and Orders*: A contest proceeding may be filed with the Commission by operators, miners or miners' representatives to challenge the issuance of a citation or order issued by MSHA, including citations related to disputed provisions of operators' emergency response plans.
- *Contests of Proposed Penalties (Petitions for Assessment of Penalties)*: A contest of a proposed penalty is an administrative proceeding before the Commission challenging a civil penalty that MSHA has proposed for the violation. Such proceedings may also involve appeals of judges' decisions or orders to the Commission on proposed penalties, including petitions for discretionary review and review by the Commission on its own motion.
- *Complaints for Compensation*: A complaint for compensation may be filed with the Commission by miners entitled to compensation when a mine is closed by certain withdrawal orders issued by MSHA. The purpose of the proceeding is to determine the amount of compensation, if any, due miners idled by the orders.
- *Complaints of Discharge, Discrimination or Interference*: A discrimination proceeding is a case that involves a miner's allegation that he or she has suffered a wrong by the operator because he or she engaged in some type of activity protected under the Mine Act, such as making a safety complaint. This category includes temporary reinstatement proceedings, which involve cases in which a miner has filed a complaint with MSHA stating he or she has suffered discrimination and the miner has lost his or her position.
- *Applications for Temporary Relief*: An application for temporary relief from any modification or termination of any order or from any order issued under certain subparts of section 104 of the Mine Act may be filed with the Commission at any time before such order becomes final.
- *Appeals of Judges' Decisions or Orders*.

For the three months ended March 31, 2023, there were no pending or legal actions before the Commission at Five Forks Mine. For the period between January 1, 2023 and March 27, 2023 there were no pending or legal actions before the Commission at Marshall Mine. Further, for the period between February 1, 2023 and March 31, 2023 there were pending or legal actions before the Commission at Corbin Project and Mine Four.