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

Form 10-Q

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

For the quarterly period ended June 30, 2019

Or

[ ] **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _________________ to _________________

Commission File No. 001-11596

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
(Exact name of registrant as specified in its charter)

Delaware	**58-1954497**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification Number)*
8302 Dunwoody Place, Suite 250, Atlanta, GA	**30350**
(Address of principal executive offices)	*(Zip Code)*

(770) 587-9898
(Registrant's telephone number)

N/A
(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 [X] No [ ]

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, 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 and post such files).
Yes [X] No [ ]

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer [ ] Accelerated Filer [ ] Non-accelerated Filer [ ] Smaller reporting company [X] Emerging growth company [ ]

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial 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 [X]

Indicate the number of shares outstanding of each of the issuer's classes of Common Stock, as of the close of the latest practical date.

Class	Outstanding at July 23, 2019
Common Stock, $.001 Par Value	12,069,776 shares

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

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PART I - FINANCIAL INFORMATION
ITEM 1. – Financial Statements

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
Consolidated Balance Sheets

(Amounts in Thousands, Except for Share and Per Share Amounts)	June 30, 2019 (Unaudited)	December 31, 2018 (Audited)
ASSETS		
Current assets:		
Cash	$ 384	$ 810
Accounts receivable, net of allowance for doubtful accounts of $142 and $105, respectively	7,747	7,735
Unbilled receivables - current	6,158	3,105
Inventories	452	449
Prepaid and other assets	2,166	2,552
Finite risk sinking fund (restricted cash) - current	5,000	—
Current assets related to discontinued operations	98	107
Total current assets	22,005	14,758
Property and equipment:		
Buildings and land	19,782	19,782
Equipment	19,306	19,157
Vehicles	412	369
Leasehold improvements	23	23
Office furniture and equipment	1,556	1,551
Construction-in-progress	1,469	1,389
Total property and equipment	42,548	42,271
Less accumulated depreciation	(26,982)	(26,532)
Net property and equipment	15,566	15,739
Property and equipment related to discontinued operations	81	81
Operating lease right-of-use assets	2,667	—
Intangibles and other long term assets:		
Permits	8,706	8,443
Other intangible assets - net	1,167	1,278
Finite risk sinking fund (restricted cash)	11,159	15,971
Other assets	1,224	1,054
Other assets related to discontinued operations	78	118
Total assets	$ 62,653	$ 57,442

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
Consolidated Balance Sheets, Continued

(Amounts in Thousands, Except for Share and per Share Amounts)	June 30, 2019 (Unaudited)	December 31, 2018 (Audited)
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 9,640	$ 5,497
Accrued expenses	4,583	5,014
Disposal/transportation accrual	1,953	1,542
Deferred revenue	4,785	6,595
Accrued closure costs - current	156	1,142
Current portion of long-term debt	362	1,184
Current portion of long-term debt - related party	219	—
Current portion of operating lease liabilities	231	—
Current portion of finance lease liabilities	245	181
Current liabilities related to discontinued operations	311	356
Total current liabilities	22,485	21,511
Accrued closure costs	5,797	5,608
Other long-term liabilities	278	255
Deferred tax liabilities	593	586
Long-term debt, less current portion	1,659	2,118
Long-term debt, less current portion - related party	1,935	—
Long-term operating lease liabilities, less current portion	2,468	—
Long-term finance lease liabilities, less current portion	212	268
Long-term liabilities related to discontinued operations	967	963
Total long-term liabilities	13,909	9,798
Total liabilities	36,394	31,309
Commitments and Contingencies (Note 10)		
Stockholders' Equity:		
Preferred Stock, $.001 par value; 2,000,000 shares authorized, no shares issued and outstanding	—	—
Common Stock, $.001 par value; 30,000,000 shares authorized; 12,062,081 and 11,944,215 shares issued, respectively; 12,054,439 and 11,936,573 shares outstanding, respectively	12	12
Additional paid-in capital	108,110	107,548
Accumulated deficit	(80,013)	(79,630)
Accumulated other comprehensive loss	(206)	(214)
Less Common Stock in treasury, at cost; 7,642 shares	(88)	(88)
Total Perma-Fix Environmental Services, Inc. stockholders' equity	27,815	27,628
Non-controlling interest	(1,556)	(1,495)
Total stockholders' equity	26,259	26,133
Total liabilities and stockholders' equity	$ 62,653	$ 57,442

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
Consolidated Statements of Operations
(Unaudited)

(Amounts in Thousands, Except for Per Share Amounts)	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Net revenues	$ 17,135	$ 13,160	$ 28,843	$ 25,817
Cost of goods sold	13,864	11,117	23,071	20,454
Gross profit	3,271	2,043	5,772	5,363
Selling, general and administrative expenses	2,705	2,640	5,603	5,420
Research and development	223	219	450	451
Gain on disposal of property and equipment	(1)	(17)	(1)	(25)
Income (loss) from operations	344	(799)	(280)	(483)
Other income (expense):				
Interest income	107	81	188	130
Interest expense	(107)	(62)	(194)	(115)
Interest expense-financing fees	(60)	(9)	(70)	(18)
Other	95	—	224	—
Net gain on exchange offer of Series B Preferred Stock of subsidiary	—	1,596	—	1,596
Income (loss) from continuing operations before taxes	379	807	(132)	1,110
Income tax expense	6	19	45	70
Income (loss) from continuing operations, net of taxes	373	788	(177)	1,040
Loss from discontinued operations (net of taxes of $0)	(115)	(206)	(267)	(363)
Net income (loss)	258	582	(444)	677
Net loss attributable to non-controlling interest	(31)	(28)	(61)	(68)
Net income (loss) attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ 289	$ 610	$ (383)	$ 745
Net income (loss) per common share attributable to Perma-Fix Environmental Services, Inc. stockholders - basic and diluted:				
Continuing operations	$ .03	$ .07	$ (.01)	$ .09
Discontinued operations	(.01)	(.02)	(.02)	(.03)
Net income (loss) per common share	$ .02	$ .05	$ (.03)	$ .06
Number of common shares used in computing net income (loss) per share:				
Basic	12,054	11,813	12,008	11,780
Diluted	12,122	11,913	12,008	11,849

The accompanying notes are an integral part of these condensed consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
Consolidated Statements of Comprehensive Income (Loss)
(Unaudited)

(Amounts in Thousands)	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Net income (loss)	$ 258	$ 582	$ (444)	$ 677
Other comprehensive (loss) income:				
Foreign currency translation (loss) gain	(4)	(49)	8	(57)
Comprehensive income (loss)	254	533	(436)	620
Comprehensive loss attributable to non-controlling interest	(31)	(28)	(61)	(68)
Comprehensive income (loss) attributable to Perma-Fix Environmental Services, Inc. stockholders	$ 285	$ 561	$ (375)	$ 688

The accompanying notes are an integral part of these condensed consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC
Consolidated Statement of Stockholders' Equity
(Unaudited)
(Amounts in thousands, except for share amounts)

	Common Stock		Additional Paid-In	Common Stock Held In	Accumulated Other Comprehensive	Non-controlling Interest in	Accumulated	Total Stockholders'
	Shares	Amount	Capital	Treasury	Loss	Subsidiary	Deficit	Equity
Balance at December 31, 2018	11,944,215	$ 12	$ 107,548	$ (88)	$ (214)	$ (1,495)	$ (79,630)	$ 26,133
Net loss	—	—	—	—	—	(30)	(672)	(702)
Foreign currency translation	—	—	—	—	12	—	—	12
Issuance of Common Stock for services	24,964	—	60	—	—	—	—	60
Stock-Based Compensation	—	—	48	—	—	—	—	48
Balance at March 31, 2019	11,969,179	$ 12	$ 107,656	$ (88)	$ (202)	$ (1,525)	$ (80,302)	$ 25,551
Net income (loss)	—	—	—	—	—	(31)	289	258
Foreign currency translation	—	—	—	—	(4)	—	—	(4)
Issuance of Common Stock for services	17,902	—	62	—	—	—	—	62
Stock-Based Compensation	—	—	36	—	—	—	—	36
Issuance of Common Stock with debt	75,000	—	263	—	—	—	—	263
Issuance of warrant with debt	—	—	93	—	—	—	—	93
Balance at June 30, 2019	12,062,081	$ 12	$ 108,110	$ (88)	$ (206)	$ (1,556)	$ (80,013)	$ 26,259
Balance at December 31, 2017	11,738,623	$ 12	$ 106,417	$ (88)	$ (112)	$ (1,175)	$ (77,893)	$ 27,161
Adoption of accounting standards	—	—	—	—	—	—	(317)	(317)
Net income (loss)	—	—	—	—	—	(40)	135	95
Foreign currency translation	—	—	—	—	(8)	—	—	(8)
Issuance of Common Stock for services	16,074	—	60	—	—	—	—	60
Stock-Based Compensation	—	—	46	—	—	—	—	46
Balance at March 31, 2018	11,754,697	$ 12	$ 106,523	$ (88)	$ (120)	$ (1,215)	$ (78,075)	$ 27,037
Net income (loss)	—	—	—	—	—	(28)	610	582
Foreign currency translation	—	—	—	—	(49)	—	—	(49)
Issuance of Common Stock upon exercise of options	10,000	—	36	—	—	—	—	36
Issuance of Common Stock from exchange offer of Series B Preferred Stock of subsidiary	134,994	—	648	—	—	—	—	648
Issuance of Common Stock for services	15,493	—	65	—	—	—	—	65
Stock-Based Compensation	—	—	45	—	—	—	—	45
Balance at June 30, 2018	11,915,184	$ 12	$ 107,317	$ (88)	$ (169)	$ (1,243)	$ (77,465)	$ 28,364

The accompanying notes are an integral part of these condensed consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
Consolidated Statements of Cash Flows
(Unaudited)

(Amounts in Thousands)	Six Months Ended June 30, 2019	2018
Cash flows from operating activities:		
Net (loss) income	$ (444)	$ 677
Less: loss from discontinued operations, net of taxes of $0	(267)	(363)
(Loss) income from continuing operations, net of taxes	(177)	1,040
Adjustments to reconcile (loss) income from continuing operations to cash (used in) provided by operating activities:		
Depreciation and amortization	641	731
Amortization of debt discount/debt issuance costs	67	18
Deferred tax expense	7	36
Provision for bad debt reserves	37	8
Gain on disposal of property and equipment	(1)	(25)
Gain on exchange offer of Series B Preferred Stock of subsidiary	—	(1,659)
Issuance of common stock for services	122	125
Stock-based compensation	84	91
Changes in operating assets and liabilities of continuing operations		
Accounts receivable	(49)	1,857
Unbilled receivables	(3,053)	1,584
Prepaid expenses, inventories and other assets	281	773
Accounts payable, accrued expenses and unearned revenue	1,178	(1,922)
Cash (used in) provided by continuing operations	(863)	2,657
Cash used in discontinued operations	(334)	(322)
Cash (used in) provided by operating activities	(1,197)	2,335
Cash flows from investing activities:		
Purchases of property and equipment	(312)	(554)
Proceeds from sale of property and equipment	32	26
Cash used in investing activities of continuing operations	(280)	(528)
Cash provided by investing activities of dicontinued operations	44	36
Cash used in investing activities	(236)	(492)
Cash flows from financing activities:		
Repayments of revolving credit borrowings	(23,816)	(28,048)
Borrowing on revolving credit	23,177	28,048
Proceeds from issuance of long-term debt - related party	2,500	—
Proceeds from finance leases	120	—
Principal repayments of finance lease liabilities	(101)	(5)
Principal repayments of long term debt	(610)	(610)
Payment of debt issuance costs	(90)	—
Proceeds from issuance of common stock upon exercise of options	—	36
Cash provided by (used in) financing activities of continuing operations	1,180	(579)
Effect of exchange rate changes on cash	15	(12)
Decrease (increase) in cash and finite risk sinking fund (restricted cash)	(238)	1,252
Cash and finite risk sinking fund (restricted cash) at beginning of period	16,781	16,739
Cash and finite risk sinking fund (restricted cash) at end of period	$ 16,543	$ 17,991
Supplemental disclosure:		
Interest paid	$ 184	$ 115
Income taxes paid	121	160
Equipment purchase subject to capital lease	22	213
Issuance of Common Stock with debt	263	—
Issuance of Warrant with debt	93	—

The accompanying notes are an integral part of these condensed consolidated financial statements.

Reference is made herein to the notes to consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2018.

1. Basis of Presentation

The consolidated financial statements included herein have been prepared by the Company (which may be referred to as we, us or our), without an audit, pursuant to the rules and regulations of the Securities and Exchange Commission ("the Commission"). Certain information and note disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") have been condensed or omitted pursuant to such rules and regulations, although the Company believes the disclosures which are made are adequate to make the information presented not misleading. Further, the consolidated financial statements reflect, in the opinion of management, all adjustments (which include only normal recurring adjustments) necessary to present fairly the financial position and results of operations as of and for the periods indicated. The results of operations for the six months ended June 30, 2019 are not necessarily indicative of results to be expected for the fiscal year ending December 31, 2019.

The Company suggests that these consolidated financial statements be read in conjunction with the consolidated financial statements and the notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018.

2. Summary of Significant Accounting Policies

Our accounting policies are as set forth in the notes to the December 31, 2018 consolidated financial statements referred to above.

Recently Adopted Accounting Standards

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-02, "Leases (Topic 842)," which requires the recognition of right-of-use ("ROU") lease assets and lease liabilities by lessees for those leases classified as operating leases under previous guidance. The original guidance required application on a modified retrospective basis with the earliest period presented. In July 2018, the FASB issued ASU 2018-11, "Targeted Improvements," to Topic 842 which included an option to not restate comparative periods in transition and elect to use the effective date of Topic 842 as the date of initial application of transition, which the Company elected. As permitted under Topic 842, the Company adopted several practical expedients that permit us to not reassess (1) whether any expired or existing contract as of the adoption date is or contain a lease, (2) lease classification for any expired or existing leases as of the adoption date, and (3) initial direct costs for any existing leases as of the adoption date. As a result of the adoption of Topic 842 on January 1, 2019, the Company recorded both operating lease right-of-use ("ROU") assets of $2,602,000 and operating lease liabilities of $2,622,000. The cumulative-effect adjustment was immaterial to our beginning accumulated deficit upon adoption of ASU 2016-02. The adoption of Topic 842 had an immaterial impact on our Consolidated Statements of Operations and Cash Flows for the six months ended June 30, 2019. The Company's accounting for finance leases remained substantially unchanged. The Company has expanded its consolidated financial statement disclosure upon adoption of this standard (see "Note 4 – Leases").

In February 2018, FASB issued ASU 2018-02, "Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income." This ASU allows for the reclassification of certain income tax effects related to the new Tax Cuts and Jobs Act legislation between "Accumulated other comprehensive income" and "Retained earnings." This ASU relates to the requirement that adjustments to deferred tax liabilities and assets related to a change in tax laws or rates be included in "Income from continuing operations", even in situations where the related items were originally recognized in "Other comprehensive income" (rather than in "Income from continuing operations"). ASU 2018-02 is effective for all entities for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years, with early adoption permitted. Adoption of this ASU is to be applied either in the period of adoption or retrospectively to each period in which the effect of the change in the tax laws or rates were recognized. The adoption of ASU 2018-09 by the Company effective January 1, 2019 did not have a material impact on the Company's financial statements.

In June 2018, the FASB issued ASU No. 2018-07, "Compensation — Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting," which expands the scope of Topic 718 to include all share-based payment transactions for acquiring goods and services from nonemployees. ASU 2018-07 specifies that Topic 718 applies to all share-based payment transactions in which the grantor acquires goods and services to be used or consumed in its own operations by issuing share-based payment awards. ASU 2018-07 also clarifies that Topic 718 does not apply to share-based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC 606. ASU 2018-07 is effective for annual reporting periods, and interim periods within those years, beginning after December 15, 2018, with early adoption permitted. The adoption of ASU 2018-09 by the Company effective January 1, 2019 did not have a material impact on the Company's financial statements.

Recently Issued Accounting Standards – Not Yet Adopted

In June 2016, the FASB issued ASU No. 2016-13, "Credit Losses - Measurement of Credit Losses on Financial Instruments ("ASC 326")," which amends the current approach to estimate credit losses on certain financial assets, including trade and other receivables, available-for-sale securities, and other financial instruments. Generally, this amendment requires entities to establish a valuation allowance for the expected lifetime losses of these certain financial assets. Subsequent changes in the valuation allowance are recorded in current earnings and reversal of previous losses is permitted. In April 2019, the FASB issued ASU 2019-04, "Codification Improvements to Topic 326, Financial Instruments - Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments," which, with respect to credit losses, among other things, clarifies and addresses issues related to accrued interest, transfers between classifications of loans or debt securities, recoveries, and variable interest rates. Additionally, in May 2019, the FASB issued ASU 2019-05, "Financial Instruments - Credit Losses (Topic 326): Targeted Transition Relief," which allows entities to irrevocably elect the fair value option on certain financial instruments. These standards are effective for interim and annual reporting periods beginning after December 15, 2019.Entities are required to apply the standard's provisions as a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is adopted. The Company is currently assessing the impact that these standards will have on its financial statements.

In August 2018, the FASB issued ASU 2018-13, "Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement." ASU 2018-13 improves the disclosure requirements on fair value measurements. ASU 2018-13 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Early adoption is permitted for any removed or modified disclosures. The Company is currently assessing the impact that this standard will have on its financial statements.

3. Revenue

Disaggregation of Revenue

In general, the Company's business segmentation is aligned according to the nature and economic characteristics of our services and provides meaningful disaggregation of each business segment's results of operations. The nature of the Company's performance obligations within our Treatment and Services Segments result in the recognition of our revenue primarily over time. The following tables present further disaggregation of our revenues by different categories for our Services and Treatment Segments:

Revenue by Contract Type
(In thousands)

	Three Months Ended June 30, 2019			Three Months Ended June 30, 2018		
	Treatment	Services	Total	Treatment	Services	Total
Fixed price	$ 10,094	$ 2,709	$ 12,803	$ 9,146	$ 718	$ 9,864
Time and materials	—	4,332	4,332	—	3,296	3,296
Total	$ 10,094	$ 7,041	$ 17,135	$ 9,146	$ 4,014	$ 13,160

Revenue by Contract Type
(In thousands)

	Six Months Ended June 30, 2019			Six Months Ended June 30, 2018		
	Treatment	Services	Total	Treatment	Services	Total
Fixed price	$ 19,999	$ 3,137	$ 23,136	$ 18,105	$ 808	$ 18,913
Time and materials	—	5,707	5,707	—	6,904	6,904
Total	$ 19,999	$ 8,844	$ 28,843	$ 18,105	$ 7,712	$ 25,817

Revenue by generator
(In thousands)

	Three Months Ended June 30, 2019			Three Months Ended June 30, 2018		
	Treatment	Services	Total	Treatment	Services	Total
Domestic government	$ 6,537	$ 4,842	$ 11,379	$ 6,011	$ 3,265	$ 9,276
Domestic commercial	3,395	855	4,250	3,135	541	3,676
Foreign government	162	1,323	1,485	—	185	185
Foreign commercial	—	21	21	—	23	23
Total	$ 10,094	$ 7,041	$ 17,135	$ 9,146	$ 4,014	$ 13,160

Revenue by generator
(In thousands)

	Six Months Ended June 30, 2019			Six Months Ended June 30, 2018		
	Treatment	Services	Total	Treatment	Services	Total
Domestic government	$ 14,449	$ 5,529	$ 19,978	$ 12,546	$ 6,383	$ 18,929
Domestic commercial	5,274	1,613	6,887	5,559	943	6,502
Foreign government	220	1,659	1,879	—	338	338
Foreign commercial	56	43	99	—	48	48
Total	$ 19,999	$ 8,844	$ 28,843	$ 18,105	$ 7,712	$ 25,817

Contract Balances

The timing of revenue recognition, billings, and cash collections results in accounts receivable and unbilled receivables (contract assets). The Company's contract liabilities consist of deferred revenues which represents advance payment from customers in advance of the completion of our performance obligation.

The following table represents changes in our contract assets and contract liabilities balances:

(In thousands)	June 30, 2019	December 31, 2018	Year-to-date Change ($)	Year-to-date Change (%)
Contract assets				
Account receivables, net of allowance	$ 7,747	$ 7,735	$ 12	0.2%
Unbilled receivables - current	6,158	3,105	3,053	98.3%
Contract liabilities				
Deferred revenue	$ 4,785	$ 6,595	$ (1,810)	(27.4)%

During the three and six months ended June 30, 2019, the Company recognized revenue of $2,866,000 and $7,446,000, respectively, which was included in the deferred revenue balance at the beginning of the year. During the three and six months ended June 30, 2018, the Company recognized revenue of $1,629,000 and $5,440,000, respectively, which was included in the deferred revenue balance at the beginning of the year. All revenue recognized in each period related to performance obligations satisfied within the respective period.

Remaining Performance Obligations

The Company applies the practical expedient in paragraph 606-10-50-14 and does not disclose information about remaining performance obligations that have original expected durations of one year or less.

4. Leases

At the inception of an arrangement, the Company determines if an arrangement is, or contains, a lease based on facts and circumstances present in that arrangement. Lease classifications, recognition, and measurement are then determined at the lease commencement date.

The Company's operating lease ROU assets and operating lease liabilities represent primarily leases for office spaces used to conduct our business. These leases have remaining terms of approximately 5 to 11 years which include one or more options to renew, with renewal terms from 3 years to 8 years. Based on the Company's reasonable certainty to exercise these renewal options, the renewal to extend the lease terms are included in valuing our ROU assets and liabilities. As most of our operating leases do not provide an implicit rate, the Company uses its incremental borrowing rate as the discount rate when determining the present value of the lease payments. The incremental borrowing rate is determined based on the Company's secured borrowing rate, lease terms and current economic environment. Some of our operating leases include both lease (rent payments) and non-lease components (maintenance costs such as cleaning and landscaping services). The Company has elected the practical expedient to account for lease component and non-lease component as a single component for all leases. Lease expense for operating leases is recognized on a straight-line basis over the lease term.

Finance leases primarily consist of processing and lab equipment for our facilities. The Company's finance leases generally have terms between two to three years and some of the leases include options to purchase the underlying assets at fair market value at the conclusion of the lease term. At June 30, 2019, assets recorded under finance leases were $655,000 less accumulated depreciation of $28,000, resulting in net fixed assets under finance leases of $627,000, which is recorded within net property and equipment on the Consolidated Balance Sheets.

The Company adopted the policy to not recognize ROU assets and liabilities for short term leases.

The components of lease cost for the Company's leases were as follows (in thousands):

	Three Months Ended June 30, 2019	Six Months Ended June 30, 2019
Operating Leases:		
Lease cost	$ 124	$ 228
Finance Leases:		
Amortization of ROU assets	10	19
Interest on lease liablity	13	25
	23	44
Short-term lease rent expense	23	72
Total lease cost	$ 170	$ 344

The weighted average remaining lease term and the weighted average discount rate for operating and finance leases at June 30, 2019 was:

	Operating Leases	Finance Leases
Weighted average remaining lease terms (years)	9.2	1.5
Weighted average discount rate	8.0%	11.1%

The following table reconciles the undiscounted cash flows for the operating and finance leases at June 30, 2019 to the operating and finance lease liabilities recorded on the balance sheet (in thousands):

	Operating Leases	Finance Leases
2019 Remainder	$ 218	$ 141
2020	443	336
2021	450	27
2022	459	—
2023	466	—
2024 and thereafter	1,799	—
Total undiscounted lease payments	3,835	504
Less: Imputed interest	(1,136)	(47)
Present value of lease payments	$ 2,699	$ 457
Current portion of operating lease obligations	$ 231	$ —
Long-term operating lease obligations, less current portion	$ 2,468	$ —
Current portion of finance lease obligations	$ —	$ 245
Long-term finance lease obligations, less current portion	$ —	$ 212

Supplemental cash flow and other information related to our leases were as follows (in thousands):

	Three Months Ended June 30, 2019	Six Months Ended June 30, 2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flow used in operating leases	$ 119	$ 217
Operating cash flow used in finance leases	$ 13	$ 25
Financing cash flow used in finance leases	$ 57	$ 101
ROU assets obtained in exchange for lease obligations for:		
Finance liabilities	$ —	$ 138
Operating liabilities	$ 182	$ 182

5. Intangible Assets

The following table summarizes information relating to the Company's definite-lived intangible assets:

		June 30, 2019			December 31, 2018		
Intangibles (amount in thousands)	Useful Lives (Years)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patent	1-17	$ 740	$ (348)	$ 392	$ 728	$ (336)	$ 392
Software	3	412	(406)	6	410	(403)	7
Customer relationships	10	3,370	(2,601)	769	3,370	(2,491)	879
Permit	10	545	(545)	—	545	(538)	7
Total		$ 5,067	$ (3,900)	$ 1,167	$ 5,053	$ (3,768)	$ 1,285

The intangible assets noted above are amortized on a straight-line basis over their useful lives with the exception of customer relationships which are being amortized using an accelerated method. The Company had only one definite-lived permit that was subject to amortization. This definite-lived permit was fully amortized in the first quarter of 2019.

The following table summarizes the expected amortization over the next five years for our definite-lived intangible assets:

Year	Amount (In thousands)
2019 (remaining)	$ 122
2020	219
2121	198
2022	172
2023	132

Amortization expenses relating to the definite-lived intangible assets as discussed above were $61,000 and $134,000 for the three and six months ended June 30, 2019, respectively, and $85,000 and $169,000 for the three and six months ended June 30, 2018, respectively.

6. <u>Capital Stock, Stock Plans and Stock Based Compensation</u>

The Company has certain stock option plans under which it may awards incentive stock options ("ISOs") and/or non-qualified stock options ("NQSOs") to employees, officers, outside directors, and outside consultants.

On January 17, 2019 the Company granted 105,000 ISOs from the 2017 Stock Option Plan to certain employees, which included our named executive officers as follows: 25,000 ISOs to our Chief Executive Officer ("CEO"), Mark Duff; 15,000 ISOs to our Chief Financial Officer ("CFO"), Ben Naccarato; and 15,000 ISOs to our Executive Vice President ("EVP") of Strategic Initiatives, Dr. Louis Centofanti. The ISOs granted were for a contractual term of six years with one-fifth vesting annually over a five year period. The exercise price of the ISO was $3.15 per share, which was equal to the fair market value of the Company's Common Stock on the date of grant.

On January 18, 2018, the Company granted 6,000 NQSOs from the Company's 2003 Outside Directors Stock Plan to a new director elected by the Company's Board of Directors ("Board") to fill a vacancy on the Board. The NQSOs granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the options was $4.05 per share, which was equal to our closing stock price the day preceding the grant date, pursuant to the 2003 Outside Directors Stock Plan.

The Company granted a NQSO to Robert Ferguson on July 27, 2017 from the Company's 2017 Stock Option Plan for the purchase of up to 100,000 shares of the Company's Common Stock ("Ferguson Stock Option") in connection with his work as a consultant to the Company's Test Bed Initiative ("TBI") at our Perma-Fix Northwest Richland, Inc. ("PFNWR") facility. The vesting of the Ferguson Stock Option is subject to the achievement of three separate milestones by certain dates. On January 17, 2019, the Company's Compensation and Stock Option Committee ("Compensation Committee") and Board approved an amendment to the Ferguson Stock Option whereby the vesting date for the second milestone was extended to March 31, 2020 from January 27, 2019. The 10,000 options under the first milestone were vested and exercised by Robert Ferguson in May 2018. All other terms of the Ferguson Stock Option remain unchanged.

The Company estimates fair value of stock options using the Black-Scholes valuation model. Assumptions used to estimate the fair value of stock options granted include the exercise price of the award, the expected term, the expected volatility of the Company's stock over the option's expected term, the risk-free interest rate over the option's expected term, and the expected annual dividend yield. The fair value of the options granted on January 17, 2019 and January 18, 2018 as discussed above and the related assumptions used in the Black-Scholes option model used to value the options granted were as follows:

	Employee Stock Option Granted	Outside Director Stock Options Granted
	January 17, 2019	January 18, 2018
Weighted-average fair value per option	$ 1.42	$ 2.55
Risk -free interest rate [(1)]	2.58%	2.62%
Expected volatility of stock [(2)]	48.67%	57.29%
Dividend yield	None	None
Expected option life [(3)]	5.0 years	10.0 years

(1) The risk-free interest rate is based on the U.S. Treasury yield in effect at the grant date over the expected term of the option.

(2) The expected volatility is based on historical volatility from our traded Common Stock over the expected term of the option.

(3) The expected option life is based on historical exercises and post-vesting data.

The following table summarizes stock-based compensation recognized for the three and six months ended June 30, 2019 and 2018 for our employee and director stock options.

Stock Options	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Employee Stock Options	$ 36,000	$ 37,000	$ 79,000	$ 73,000
Director Stock Options	—	8,000	5,000	18,000
Total	$ 36,000	$ 45,000	$ 84,000	$ 91,000

At June 30, 2019, the Company has approximately $476,000 of total unrecognized compensation cost related to unvested options for employee and directors, of which $69,000 is expected to be recognized in remaining 2019, $139,000 in 2020, $139,000 in 2021, $100,000 in 2022, $28,000 in 2023, with the remaining $1,000 in 2024. At June 30, 2019, the Company has not recognized compensation costs (fair value of approximately $148,000 at June 30, 2019) for the remaining 90,000 Ferguson Stock Option discussed above since achievement of the performance obligation under each of the two remaining milestones is uncertain at June 30, 2019.

The summary of the Company's total Stock Option Plans as of June 30, 2019 and June 30, 2018, and changes during the periods then ended, are presented below. The Company's Plans consist of the 2010 and 2017 Stock Option Plans and the 2003 Outside Directors Stock Plan:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value [(2)]
Options outstanding January 1, 2019	616,000	$ 4.23		
Granted	105,000	3.15		
Exercised	—	—		
Forfeited/expired	(13,000)	3.43		
Options outstanding end of period [(1)]	708,000	$ 4.08	4.4	$ 209,318
Options exercisable as of June 30, 2019[(1)]	430,000	$ 4.94	4.1	$ 43,518

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value [2]
Options outstanding January 1, 2018	624,800	$ 4.42		
Granted	6,000	4.05		
Exercised	(10,000)	3.65		
Forfeited/expired	—	—		
Options outstanding end of period [1]	620,800	$ 4.43	5.0	$ 435,870
Options exercisable as of June 30, 2018[1]	198,133	$ 6.07	4.3	$ 78,836

[1] Options with exercise prices ranging from $2.79 to $13.35

[2] The intrinsic value of a stock option is the amount by which the market value of the underlying stock exceeds the exercise price.

During the six months ended June 30, 2019, the Company issued a total of 42,866 shares of its Common Stock under the 2003 Outside Directors Stock Plan to its outside directors as compensation for serving on our Board. The Company has recorded approximately $123,000 in compensation expenses (included in selling, general and administration ("SG&A") expenses) in connection with the issuance of shares of its Common Stock to outside directors.

7. **Income (Loss) Per Share**

Basic income (loss) per share is calculated based on the weighted-average number of outstanding common shares during the applicable period. Diluted income (loss) per share is based on the weighted-average number of outstanding common shares plus the weighted-average number of potential outstanding common shares. In periods where they are anti-dilutive, such amounts are excluded from the calculations of dilutive earnings per share. The following table reconciles the income (loss) and average share amounts used to compute both basic and diluted income (loss) per share:

(Amounts in Thousands, Except for Per Share Amounts)	Three Months Ended June 30, (Unaudited) 2019	Three Months Ended June 30, (Unaudited) 2018	Six Months Ended June 30, (Unaudited) 2019	Six Months Ended June 30, (Unaudited) 2018
Net income (loss) attributable to Perma-Fix Environmental Services, Inc., common stockholders:				
Income (loss) from continuing operations, net of taxes	$ 373	$ 788	$ (177)	$ 1,040
Net loss attributable to non-controlling interest	(31)	(28)	(61)	(68)
Income (loss) from continuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders	404	816	(116)	1,108
Loss from discontinuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders	(115)	(206)	(267)	(363)
Net income (loss) attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ 289	$ 610	$ (383)	$ 745
Basic income (loss) per share attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ .02	$ .05	$ (.03)	$ .06
Diluted income (loss) per share attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ .02	$ .05	$ (.03)	$ .06
Weighted average shares outstanding:				
Basic weighted average shares outstanding	12,054	11,813	12,008	11,780
Add: dilutive effect of stock options	68	100	—	69
Diluted weighted average shares outstanding	12,122	11,913	12,008	11,849
Potential shares excluded from above weighted average share calcualtions due to their anti-dilutive effect include:				
Upon exercise of options	113	100	186	100

8. **Long Term Debt**

Long-term debt consists of the following at June 30, 2019 and December 31, 2018:

(Amounts in Thousands)	June 30, 2019	December 31, 2018
Revolving Credit facility dated October 31, 2011, as amended, borrowings based upon eligible accounts receivable, subject to monthly borrowing base calculation, balance due March 24, 2021. Effective interest rate for the first six months of 2019 was 6.8%. [1]	$ —	$ 639
Term Loan dated October 31, 2011, as amended, payable in equal monthly installments of principal of $102, balance due on March 24, 2021. Effective interest rate for the first six months of 2019 was 6.2%. [1]	2,021[2]	2,663[2]
Promissory Note with related party dated April 1, 2019, payable in twelve monthly installments of interest only, starting May 1, 2019 followed with twelve monthly installments of approximately $208 in principal plus accrued interest. Interest accrues at annual rate of 4.0%. [3]	2,154[4]	—
Total debt	4,175	3,302
Less current portion of long-term debt	581	1,184
Long-term debt	$ 3,594	$ 2,118

[1] Our revolving credit facility is collateralized by our accounts receivable and our term loan is collateralized by our property, plant, and equipment. Effective July 1, 2019, monthly installment principal payment on the Term Loan was amended to approximately $35,547 from approximately $101,600. See discussion of the amendment dated June 20, 2019 to the Company's loan agreement below.

[2] Net of debt issuance costs of ($112,000) and ($80,000) at June 30, 2019 and December 31, 2018, respectively.

[3] Uncollateralized note.

[4] Net of debt discount/debt issuance of ($346,000) at June 30, 2019.

Revolving Credit and Term Loan Agreement

The Company entered into an Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated October 31, 2011 ("Amended Loan Agreement"), with PNC National Association ("PNC"), acting as agent and lender. The Amended Loan Agreement has been amended from time to time since the execution of the Amended Loan Agreement. The Amended Loan Agreement, as subsequently amended ("Revised Loan Agreement"), provides the Company with the following credit facility with a maturity date of March 24, 2021: (a) up to $12,000,000 revolving credit ("revolving credit") and (b) a term loan ("term loan") of approximately $6,100,000, which requires monthly installments of approximately $101,600 (based on a seven-year amortization). The maximum that we can borrow under the revolving credit is based on a percentage of eligible receivables (as defined) at any one time reduced by outstanding standby letters of credit and borrowing reductions that our lender may impose from time to time.

On March 29, 2019, the Company entered into an amendment to its Revised Loan Agreement with its lender under the credit facility which provided the following:

- waived the Company's failure to meet the minimum quarterly fixed charge coverage ratio ("FCCR") requirement for the fourth quarter of 2018;
- waived the quarterly FCCR testing requirement for the first quarter of 2019;
- revised the methodology to be used in calculating the FCCR in each of the second and third quarters of 2019 (with continued requirement to maintain a minimum 1.15:1 ratio in each of the quarters);
- revised the minimum Tangible Adjusted Net Worth requirement (as defined in the Revised Loan Agreement) from $26,000,000 to $25,000,000;
- eliminated the London InterBank Offer Rate ("LIBOR") interest payment option of paying annual rate of interest due on our term loan and revolving credit until the Company becomes compliant with its FCCR requirement again. Prior to this amendment, the Company had the option of paying annual rate of interest due on the revolving credit at prime (5.50% at June 30, 2019) plus 2% or LIBOR plus 3% and the term loan at prime plus 2.5% or LIBOR plus 3.5%;
- provided consent for the $2,500,000 loan that the Company entered into with Robert Ferguson on April 1, 2019 discussed below. The Company is not allowed to make any principal prepayment on this loan until it receives the restricted finite risk sinking funds of approximately $5,000,000 held as collateral by AIG Specialty Insurance Company ("AIG") under our financial assurance policy resulting from the closure of the Company's East Tennessee Material and Energy Corporation ("M&EC") facility (see "Note 10 – Commitments and Contingencies – Insurance" for a discussion of restricted sinking funds held by AIG under our financial assurance policy and "Note 14 – Subsequent Events – 2003 Closure Policy" for the receipt of this $5,000,000 in restricted sinking funds); and
- revised the annual rate used to calculate the Facility Fee (as defined in the Revised Loan Agreement) (unused revolving credit line fee) from 0.250% to 0.375%.

On June 20, 2019, the Company entered into another amendment to its Revised Loan Agreement with its lender under the credit facility which provided the following, among other things:

- removed the FCCR calculation requirement for the second, third and fourth quarter of 2019. Starting in the first quarter of 2020, the Company will again be required to maintain a minimum FCCR of not less than 1.15 to 1.0 for the four quarter period ending March 31, 2020 and for each fiscal quarter thereafter;
- requires the Company to maintain a minimum Adjusted Earnings Before Interest, Taxes, Depreciation and Amortization ("Adjusted EBITDA" as defined in the Amendment) of at least (i) $475,000 for the one quarter period ending June 30, 2019; (ii) $2,350,000 for the two quarter period ending September 30, 2019; and (iii) $3,750,000 for the three quarter period ending December 31, 2019;

- immediate release of $450,000 of the $1,000,000 indefinite reduction in borrowing availability that our lender had previously imposed. Our lender will release another $300,000 of the remaining $550,000 reduction in borrowing availability if the Company meets its minimum Adjusted EBITDA requirement for the quarter ending September 30, 2019 as discussed above, in addition to the Company having received no less than $4,000,000 of the restricted finite risk sinking funds held as collateral by AIG under our financial assurance policy. Our lender will release the final $250,000 reduction in borrowing availability if the Company meets its Adjusted EBITDA requirement for the three quarter period ending December 31, 2019; and
- reduce the term loan monthly principal payment starting July 1, 2019 from $101,600 to approximately $35,547, with the remaining balance of the term loan due at the maturity of the Revised Loan Agreement which is March 24, 2021.

Most of the other terms of the Revised Loan Agreement, as amended, remain principally unchanged. In connection with amendment dated March 29, 2019 and June 20, 2019, the Company paid its lender a fee of $20,000 and $50,000, respectively.

Pursuant to the Revised Loan Agreement, as amended, the Company may terminate the Revised Loan Agreement, as amended, upon 90 days' prior written notice upon payment in full of its obligations under the Revised Loan Agreement, as amended. No early termination fee shall apply if the Company pays off its obligations after March 23, 2019.

At June 30, 2019, the borrowing availability under our revolving credit was approximately $3,463,000, based on our eligible receivables and includes an indefinite reduction of borrowing availability of $550,000 that the Company's lender has imposed. Our borrowing availability under our revolving credit was also reduced by outstanding standby letters of credit totaling approximately $2,639,000.

The Company's credit facility with PNC contains certain financial covenants, along with customary representations and warranties. A breach of any of these financial covenants, unless waived by PNC, could result in a default under our credit facility allowing our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. As discussed above, our lender waived/removed our FCCR testing requirement for each of the quarters in 2019. The Company met its "Adjusted EBITDA" minimum requirement in the second quarter of 2019 in accordance to the amendment dated June 20, 2019 discussed above. Additionally, the Company met its remaining financial covenant requirements in the first and second quarters of 2019 and expects to meet its financial covenants in each of the remaining quarters of 2019 and into the first nine months of 2020.

Loan and Securities Purchase Agreement, Promissory Note and Subordination Agreement

On April 1, 2019, the Company completed a lending transaction with Robert Ferguson (the "Lender"), whereby the Company borrowed from the Lender the sum of $2,500,000 pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the "Loan"). The Lender is a shareholder of the Company. The Lender also currently serves as a consultant to the Company in connection with the TBI at its PFNWR subsidiary. The proceeds from the Loan are being used for general working capital purposes. The Loan is unsecured, with a term of two years with interest payable at a fixed interest rate of 4.00% per annum. The Loan provides for monthly payments of accrued interest only during the first year of the Loan, with the first interest payment due May 1, 2019 and monthly payments of approximately $208,333 in principal plus accrued interest starting in the second year of the Loan. The Loan also allows for prepayment of principal payments over the term of the Loan without penalty. In connection with the above Loan, the Lender agreed under the terms of the Loan and a Subordination Agreement with our credit facility lender, to subordinate payment under the Loan, and agreed that the Loan will be junior in right of payment to the credit facility in the event of default or bankruptcy or other insolvency proceeding by us. In connection with this capital raise transaction described above and consideration for us receiving the Loan, the Company issued a Warrant (the "Warrant") to the Lender to purchase up to 60,000 shares of our Common Stock at an exercise price of $3.51 per share, which was the closing bid price for a share of our Common Stock on NASDAQ.com immediately preceding the execution of the Loan and Warrant. The Warrant is exercisable six months from April 1, 2019 and expires on April 1, 2024. The fair value of the Warrant was estimated to be approximately $93,000 using the Black-Scholes option pricing model with the following assumptions: 50.76% volatility, risk free interest rate of 2.31%, an expected life of five years and no dividends. As further consideration for this capital raise transaction relating to the Loan, the Company issued 75,000 shares of its Common Stock to the Lender. The Company determined the fair value of the 75,000 shares of Common Stock to be approximately $263,000 which was based on the closing bid price for a share of the Company's Common Stock on NASDAQ.com immediately preceding the execution of the Loan, pursuant to the Loan and Securities Purchase Agreement. The fair value of the Warrant and Common Stock and the related closing fees incurred totaling approximately $396,000 from the transaction was recorded as debt discount/debt issuance costs, which is being amortized over the term of the loan as interest expense – financing fees. The 75,000 shares of Common Stock, the Warrant and the 60,000 shares of Common Stock that may be purchased under the Warrant will be and was issued in a private placement that was exempt from registration under Rule 506 and/or Sections 4(a)(2) and 4(a)(5) of the Securities Act of 1933, as amended (the "Act") and bear a restrictive legend against resale except in a transaction registered under the Act or in a transaction exempt from registration thereunder.

Upon default, the Lender will have the right to elect to receive in full and complete satisfaction of the Company's obligations under the Loan either: (a) the cash amount equal to the sum of the unpaid principal balance owing under the loan and all accrued and unpaid interest thereon (the "Payoff Amount") or (b) upon meeting certain conditions, the number of whole shares of the Company's Common Stock (the "Payoff Shares") determined by dividing the Payoff Amount by the dollar amount equal to the closing bid price of our Common Stock on the date immediately prior to the date of default, as reported or quoted on the primary nationally recognized exchange or automated quotation system on which our Common Stock is listed; provided however, that the dollar amount of such closing bid price shall not be less than $3.51, the closing bid price for our Common Stock as disclosed on NASDAQ.com immediately preceding the signing of this loan agreement.

If issued, the Payoff Shares will not be registered and the Lender will not be entitled to registration rights with respect to the Payoff Shares. The aggregate number of shares, warrant shares, and Payoff Shares that are or will be issued to the Lender pursuant to the Loan, together with the aggregate shares of the Company's Common Stock and other voting securities owned by the Lender or which may be acquired by the Lender as of the date of issuance of the Payoff Shares, shall not exceed the number of shares of the Company's Common Stock equal to 14.9% of the number of shares of the Company's Common Stock issued and outstanding as of the date immediately prior to the default, less the number of shares of the Company's Common Stock owned by the Lender immediately prior to the date of such default plus the number of shares of our Common Stock that may be acquired by the Lender under warrants and/or options outstanding immediately prior to the date of such default.

9. M&EC

The Company has completed the closure and decommissioning activities of its M&EC facility in accordance with M&EC's license and permit requirements.

At June 30, 2019, total accrued closure liabilities for our M&EC subsidiary totaled approximately $156,000 which are recorded as current liabilities. The Company recorded an additional $330,000 in closure costs and current closure liabilities during the first six months of 2019 due to finalization of closure requirements, of which approximately $165,000 was recorded in the second quarter of 2019. The following reflects changes to the closure liabilities for the M&EC facility from year end 2018:

Amounts in thousands		
Balance as of December 31, 2018	$	1,142
Adjustment to closure liability		330
Spending		(1,316)
Balance as of June 30, 2019	$	156

10. Commitments and Contingencies

Hazardous Waste

In connection with our waste management services, we process both hazardous and non-hazardous waste, which we transport to our own, or other, facilities for destruction or disposal. As a result of disposing of hazardous substances, in the event any cleanup is required, we could be a potentially responsible party for the costs of the cleanup notwithstanding any absence of fault on our part.

Legal Matters

In the normal course of conducting our business, we are involved in various litigation. We are not a party to any litigation or governmental proceeding which our management believes could result in any judgments or fines against us that would have a material adverse effect on our financial position, liquidity or results of future operations.

Insurance

The Company has a 25-year finite risk insurance policy entered into in June 2003 ("2003 Closure Policy") with AIG, which provides financial assurance to the applicable states for our permitted facilities in the event of unforeseen closure. The 2003 Closure Policy, as amended, provides for a maximum allowable coverage of $39,000,000 and has available capacity to allow for annual inflation and other performance and surety bond requirements. At June 30, 2019, our financial assurance coverage amount under this 2003 Closure Policy totaled approximately $30,549,000. The Company had contributed $16,159,000 and $15,971,000 in finite risk sinking funds ("sinking funds") related to this policy in other long term assets on the accompanying Consolidated Balance Sheets at June 30, 2019 and December 31, 2018, respectively, which includes interest earned of $1,688,000 and $1,500,000 on the sinking funds as of June 30, 2019 and December 31, 2018, respectively (see a discussion of the subsequent reclassification of $5,000,000 in sinking funds at June 30, 2019 to sinking funds receivable in current assets on the accompanying Consolidated Balance Sheets at June 30, 2019 below). Interest income for the three and six months ended June 30, 2019 was approximately $107,000 and $188,000, respectively. Interest income for the three and six months ended June 30, 2018 was approximately $81,000 and $131,000, respectively. If the Company so elects, AIG is obligated to pay the Company an amount equal to 100% of the sinking fund account balance in return for complete release of liability from both us and any applicable regulatory agency using this policy as an instrument to comply with financial assurance requirements.

As previously discussed, the Company had been working with AIG and certain government regulators which would allow for the release of approximately $5,000,000 of the sinking funds held as collateral under the 2003 Closure Policy upon closure of the M&EC facility. On July 22, 2019, the Company received $5,000,000 of the sinking funds. Accordingly, at June 30, 2019, the Company reclassified $5,000,000 of the $16,159,000 in sinking funds initially included in other long term assets on the accompanying Consolidated Balance Sheets to sinking funds (restricted cash) included in current assets on the accompanying Consolidated Balance Sheets (See "Note 14 – Subsequent Events – 2003 Closure Policy" for a discussion of the release of the sinking funds by AIG and certain amendment made to the 2003 Closure Policy).

Letter of Credits and Bonding Requirements

From time to time, the Company is required to post standby letters of credit and various bonds to support contractual obligations to customers and other obligations, including facility closures. At June 30, 2019, the total amount of standby letters of credit outstanding totaled approximately $2,639,000 and the total amount of bonds outstanding totaled approximately $29,465,000.

11. Discontinued Operations

The Company's discontinued operations consist of all our subsidiaries included in our Industrial Segment: (1) subsidiaries divested in 2011 and prior, (2) two previously closed locations, and (3) our PFSG facility is in closure status, which final closure is subject to regulatory approval of necessary plans and permits.

The Company's discontinued operations had net losses of $115,000 and $206,000 for the three months ended June 30, 2019 and 2018, respectively (net of taxes of $0 for each period) and net losses of $267,000 and $363,000 for the six months ended June 30, 2019 and 2018, respectively, (net of taxes of $0 for each period). The losses were primarily due to costs incurred in the administration and continued monitoring of our discontinued operations. The Company's discontinued operations had no revenues for each of the periods noted above.

The following table presents the major class of assets of discontinued operations as of June 30, 2019 and December 31, 2018. No assets and liabilities were held for sale at each of the periods noted.

(Amounts in Thousands)	June 30, 2019	December 31, 2018
Current assets		
Other assets	$ 98	$ 107
Total current assets	98	107
Long-term assets		
Property, plant and equipment, net (1)	81	81
Other assets	78	118
Total long-term assets	159	199
Total assets	$ 257	$ 306
Current liabilities		
Accounts payable	$ 9	$ 10
Accrued expenses and other liabilities	262	296
Environmental liabilities	40	50
Total current liabilities	311	356
Long-term liabilities		
Closure liabilities	130	126
Environmental liabilities	837	837
Total long-term liabilities	967	963
Total liabilities	$ 1,278	$ 1,319

(1) net of accumulated depreciation of $10,000 for each period presented.

The Company's discontinued operations included a note receivable in the original amount of approximately $375,000 recorded in May 2016 resulting from the sale of property at our Perma-Fix of Michigan, Inc. subsidiary. This note requires 60 equal monthly installment payments by the buyer of approximately $7,250 (which includes interest). At June 30, 2019, the outstanding amount on this note receivable totaled approximately $157,000, of which approximately $79,000 is included in "Current assets related to discontinued operations" and approximately $78,000 is included in "Other assets related to discontinued operations" in the accompanying Consolidated Balance Sheets.

12. Operating Segments

In accordance with ASC 280, "Segment Reporting", the Company defines an operating segment as a business activity: (1) from which we may earn revenue and incur expenses; (2) whose operating results are regularly reviewed by the chief operating decision maker ("CODM") to make decisions about resources to be allocated to the segment and assess its performance; and (3) for which discrete financial information is available.

Our reporting segments are defined as below:

TREATMENT SEGMENT, which includes:

- nuclear, low-level radioactive, mixed waste (containing both hazardous and low-level radioactive constituents), hazardous and non-hazardous waste treatment, processing and disposal services primarily through three uniquely licensed and permitted treatment and storage facilities; and
- R&D activities to identify, develop and implement innovative waste processing techniques for problematic waste streams.

SERVICES SEGMENT, which includes:

- Technical services, which include:
  - professional radiological measurement and site survey of large government and commercial installations using advanced methods, technology and engineering;
  - integrated Occupational Safety and Health services including IH assessments; hazardous materials surveys, e.g., exposure monitoring; lead and asbestos management/abatement oversight; indoor air quality evaluations; health risk and exposure assessments; health & safety plan/program development, compliance auditing and training services; and OSHA citation assistance;
  - global technical services providing consulting, engineering, project management, waste management, environmental, and decontamination and decommissioning field, technical, and management personnel and services to commercial and government customers; and
  - on-site waste management services to commercial and governmental customers.
- Nuclear services, which include:
  - technology-based services including engineering, decontamination and decommissioning ("D&D"), specialty services and construction, logistics, transportation, processing and disposal;
  - remediation of nuclear licensed and federal facilities and the remediation cleanup of nuclear legacy sites. Such services capability includes: project investigation; radiological engineering; partial and total plant D&D; facility decontamination, dismantling, demolition, and planning; site restoration; logistics; transportation; and emergency response; and
- A company owned equipment calibration and maintenance laboratory that services, maintains, calibrates, and sources (i.e., rental) health physics, IH and customized NIOSH instrumentation.
- A company owned gamma spectroscopy laboratory for the analysis of oil and gas industry solids and liquids.

MEDICAL SEGMENT, which includes: Research and Development ("R&D") of the Company's medical isotope production technology by our majority-owned Polish subsidiary, Perma-Fix Medical S.A. and its wholly-owned subsidiary Perma-Fix Medical Corporation ("PFM Corporation") (together known as "PF Medical" or the Medical Segment). The Company's Medical Segment has not generated any revenue as it remains in the R&D stage. The Medical Segment has substantially reduced its R&D activities due to the need for capital to fund these activities. The Company anticipates that the Medical Segment will not resume full R&D activities until the necessary capital is obtained through its own credit facility or additional equity raise or obtains partners willing to provide funding for its R&D. All costs incurred by the Medical Segment are reflected within R&D in the accompanying consolidated financial statements.

Our reporting segments exclude our corporate headquarters and our discontinued operations (see "Note 11 – Discontinued Operations") which do not generate revenues.

The table below presents certain financial information of our operating segments for the three and six months ended June 30, 2019 and 2018 (in thousands).

Segment Reporting for the Quarter Ended June 30, 2019

	Treatment	Services	Medical	Segments Total	Corporate [1]	Consolidated Total
Revenue from external customers	$ 10,094	$ 7,041	—	$ 17,135	—	$ 17,135
Intercompany revenues	7	42	—	49	—	—
Gross profit	2,627	644	—	3,271	—	3,271
Research and development	136	—	80	216	7	223
Interest income	—	—	—	—	107	107
Interest expense	(30)	(4)	—	(34)	(73)	(107)
Interest expense-financing fees	—	—	—	—	(60)	(60)
Depreciation and amortization	233	79	—	312	5	317
Segment income (loss) before income taxes	1,611	137	(80)	1,668	(1,289)	379
Income tax expense	6	—	—	6	—	6
Segment income (loss)	1,605	137	(80)	1,662	(1,289)	373
Expenditures for segment assets	73	15	—	88	—	88

Segment Reporting for the Quarter Ended June 30, 2018

	Treatment	Services	Medical	Segments Total	Corporate [1]	Consolidated Total
Revenue from external customers	$ 9,146	$ 4,014	—	$ 13,160	$ —	$ 13,160
Intercompany revenues	77	26	—	103	—	—
Gross profit	1,523	520	—	2,043	—	2,043
Research and development	115	—	71	186	33	219
Interest income	—	—	—	—	81	81
Interest expense	(8)	—	—	(8)	(54)	(62)
Interest expense-financing fees	—	—	—	—	(9)	(9)
Depreciation and amortization	227	123	—	350	9	359
Segment income (loss) before income taxes	2,028[2]	116	(71)	2,073	(1,266)	807
Income tax expense	14	—	—	14	5	19
Segment income (loss)	2,014	116	(71)	2,059	(1,271)	788
Expenditures for segment assets	271	35	—	306	—	306

Segment Reporting for the Six Months Ended June 30, 2019

	Treatment	Services	Medical	Segments Total	Corporate [1]	Consolidated Total
Revenue from external customers	$ 19,999	$ 8,844	—	$ 28,843	$ —	$ 28,843
Intercompany revenues	9	63	—	72	—	—
Gross profit	5,584	188	—	5,772	—	5,772
Research and development	283	—	154	437	13	450
Interest income	—	—	—	—	188	188
Interest expense	(47)	(13)	—	(60)	(134)	(194)
Interest expense-financing fees	—	—	—	—	(70)	(70)
Depreciation and amortization	470	157	—	627	14	641
Segment income (loss) before income taxes	3,487	(875)	(154)	2,458	(2,590)	(132)
Income tax expense	45	—	—	45	—	45
Segment income (loss)	3,442	(875)	(154)	2,413	(2,590)	(177)
Expenditures for segment assets	294	18	—	312	—	312

Segment Reporting for the Six Months Ended June 30, 2018

	Treatment	Services	Medical	Segments Total	Corporate [1]	Consolidated Total
Revenue from external customers	$ 18,105	$ 7,712	—	$ 25,817	$ —	$ 25,817
Intercompany revenues	289	39	—	328	—	—
Gross profit	4,303	1,060	—	5,363	—	5,363
Research and development	228	—	172	400	51	451
Interest income	—	—	—	—	130	130
Interest expense	(8)	(1)	—	(9)	(106)	(115)
Interest expense-financing fees	—	—	—	—	(18)	(18)
Depreciation and amortization	467	246	—	713	18	731
Segment income (loss) before income taxes	3,772[2]	31	(172)	3,631	(2,521)	1,110
Income tax expense	65	—	—	65	5	70
Segment income (loss)	3,707	31	(172)	3,566	(2,526)	1,040
Expenditures for segment assets	106	10	—	116	—	116

[1] Amounts reflect the activity for corporate headquarters not included in the segment information.

[2] Amounts included a net gain of $1,596,000 recorded resulting from the exchange offer of the Series B Preferred Stock of our M&EC subsidiary which was consummated on May 30, 2018.

13. Income Taxes

The Company uses an estimated annual effective tax rate, which is based on expected annual income, statutory tax rates and tax planning opportunities available in the various jurisdictions in which the Company operates, to determine its quarterly provision for income taxes.

The Company had income tax expenses of $6,000 and $45,000 for continuing operations for the three and six months ended June 30, 2019, respectively, and income tax expenses of $19,000 and $70,000 for continuing operations for the three and six months ended June 30, 2018, respectively. The Company's effective tax rates were approximately 1.6% and 34.1% for the three and six months ended June 30, 2019, respectively, and 2.4% and 6.3% for the three and six months ended June 30, 2018, respectively. The Company's tax rate for each of the periods discussed above was impacted by the Company's full valuation on its net deferred tax assets.

14. Subsequent Events

2003 Closure Policy

As discussed in "Note 10 – Commitment and Contingencies – Insurance," the Company had been working with AIG and certain government regulators to allow for the release of approximately $5,000,000 of the sinking funds held as collateral under the 2003 Closure Policy upon closure of the M&EC facility. On July 22, 2019, the Company received the $5,000,000 sinking funds. The funds are to be used for general working capital needs. In conjunction with the release of the sinking funds by AIG, total coverage remaining under the 2003 Closure Policy stands at $19,314,000. Additionally, the maximum coverage allowable under the 2003 Closure Policy was amended from $39,000,000 to approximately $28,177,000. As discussed in "Note 10 – Commitment and Contingencies – Insurance," as of June 30, 2019, this $5,000,000 was reclassified from sinking funds included in other long term assets on the accompanying Consolidated Balance Sheets to sinking funds included in current assets on the accompanying Consolidated Balance Sheets.

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

Forward-looking Statements

Certain statements contained within this report may be deemed "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the "Private Securities Litigation Reform Act of 1995"). All statements in this report other than a statement of historical fact are forward-looking statements that are subject to known and unknown risks, uncertainties and other factors, which could cause actual results and performance of the Company to differ materially from such statements. The words "believe," "expect," "anticipate," "intend," "will," and similar expressions identify forward-looking statements. Forward-looking statements contained herein relate to, among other things,

- demand for our services;
- continue to focus on expansion into both commercial and international markets to increase revenues;
- full implementation of our strategic plan;
- improve revenue and liquidity and increase shareholder values upon full implementation of strategic plan;
- improvement to working capital deficit;
- reductions in the level of government funding in future years;
- R&D activity of our Medical Segment;
- reducing operating costs;
- expect to meet our financial covenant requirements in the next twelve months;
- cash flow requirements;
- government funding for our services;
- may not have liquidity to repay debt if our lender accelerates payment of our borrowings;
- our cash flows from operations, our available liquidity from our credit facility, loan proceeds of $2,500,000, and finite sinking funds that we received in July 2019 are sufficient to service our operations;
- manner in which the applicable government will be required to spend funding to remediate various sites;
- funding operations;
- fund capital expenditures from cash from operations and/or financing;
- fund remediation expenditures for sites from funds generated internally;
- compliance with environmental regulations;
- potential effect of being a PRP;
- potential sites for violations of environmental laws and remediation of our facilities;
- continuation of contracts with federal government;
- loss of contracts; and
- necessary capital for Medical Segment.

While the Company believes the expectations reflected in such forward-looking statements are reasonable, it can give no assurance such expectations will prove to be correct. There are a variety of factors, which could cause future outcomes to differ materially from those described in this report, including, but not limited to:

- general economic conditions;
- material reduction in revenues;
- ability to meet PNC covenant requirements;
- inability to collect in a timely manner a material amount of receivables;
- increased competitive pressures;
- inability to maintain and obtain required permits and approvals to conduct operations;
- public not accepting our new technology;
- inability to develop new and existing technologies in the conduct of operations;
- inability to maintain and obtain closure and operating insurance requirements;
- inability to retain or renew certain required permits;
- discovery of additional contamination or expanded contamination at any of the sites or facilities leased or owned by us or our subsidiaries which would result in a material increase in remediation expenditures;
- delays at our third party disposal site can extend collection of our receivables greater than twelve months;
- refusal of third party disposal sites to accept our waste;
- changes in federal, state and local laws and regulations, especially environmental laws and regulations, or in interpretation of such;
- requirements to obtain permits for TSD activities or licensing requirements to handle low level radioactive materials are limited or lessened;
- potential increases in equipment, maintenance, operating or labor costs;
- management retention and development;
- financial valuation of intangible assets is substantially more/less than expected;
- the requirement to use internally generated funds for purposes not presently anticipated;
- inability to continue to be profitable on an annualized basis;
- inability of the Company to maintain the listing of its Common Stock on the NASDAQ;
- terminations of contracts with federal agencies or subcontracts involving federal agencies, or reduction in amount of waste delivered to the Company under the contracts or subcontracts;
- renegotiation of contracts involving the federal government;

- federal government’s inability or failure to provide necessary funding to remediate contaminated federal sites;
- disposal expense accrual could prove to be inadequate in the event the waste requires re-treatment;
- inability to raise capital on commercially reasonable terms;
- inability to increase profitable revenue;
- lender refuses to waive non-compliance or revise our covenant so that we are in compliance; and
- risk factors and other factors set forth in “Special Note Regarding Forward-Looking Statements” contained in the Company’s 2018 Form 10-K and the “Forward-Looking Statements” contained in the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of the Company’s first quarter 2019 Form 10-Q.

Overview

Revenue increased $3,975,000 or 30.2% to $17,135,000 for the three months ended June 30, 2019 from $13,160,000 for the corresponding period of 2018. Revenue increased in both Treatment and Services Segments. Services Segment revenue increased approximately $3,027,000 or 75.4% and Treatment Segment revenue increased $948,000 or 10.4%. The increase of our Services Segment revenue was attributed to contracts/task orders that were awarded for project work during the latter part of the first quarter of 2019 and into the second quarter of 2019 as previously disclosed. Total gross profit increased $1,228,000 or 60.1%. Selling, General, and Administrative (“SG&A”) expenses increased $65,000 or 2.5% for the three months ended June 30, 2019 as compared to the corresponding period of 2018.

Revenue increased $3,026,000 or 11.7% to $28,843,000 for the six months ended June 30, 2019 from $25,817,000 for the corresponding period of 2018. Revenue increased in both segments. Revenue increased $1,894,000 or 10.5% in the Treatment Segment and revenue increased $1,132,000 or 14.7% in the Services Segment. Total gross profit increased $409,000 or 7.6% for the six months ended June 30, 2019 as compared to the corresponding period of 2018. Total SG&A expenses increased $183,000 or 3.4% for the six months ended June 30, 2019 as compared to the corresponding period of 2018.

We have completed the closure and decommissioning activities of our East Tennessee Materials and Energy Corporation (“M&EC”) facility in accordance with M&EC’s license and permit requirements. As a result of this closure, on July 22, 2019, we received a release of $5,000,000 of finite risk sinking funds held as collateral under our financial assurance closure policy dated June 2003 from AIG Specialty Insurance Company (“AIG”) (see “Liquidity and Capital Resources – Insurance” within this “Management’s Discussion and Analysis of Financial Condition and Results of Operations (“MD&A”)” for a discussion of the release of this finite risk sinking funds and the reclassification of $5,000,000 of finite risk sinking funds at June 30, 2019 included in other long term assets on the accompanying Consolidated Balance Sheets to finite risk sinking funds included in current assets on the accompanying Consolidated Balance Sheet). Additionally, on April 1, 2019, we consummated a lending transaction with Mr. Robert Ferguson resulting in the receipt of $2,500,000 in loan proceeds (see “Liquidity and Capital Resources – Financing Activities” within this MD&A for a discussion of this loan transaction). Both of these transactions have improved our working capital. At June 30, 2019, we had a working capital deficit of approximately $480,000 as compared to a working capital deficit of $6,753,000 at December 31, 2018.

Business Environment and Outlook

Our Treatment and Services Segments’ business continues to be heavily dependent on services that we provide to governmental clients directly as the contractor or indirectly as a subcontractor. We believe demand for our services will continue to be subject to fluctuations due to a variety of factors beyond our control, including the current economic conditions and the manner in which the applicable government will be required to spend funding to remediate various sites. In addition, our governmental contracts and subcontracts relating to activities at governmental sites in the United States are generally subject to termination or renegotiation on 30 days’ notice at the government’s option. Significant reductions in the level of governmental funding or specifically mandated levels for different programs that are important to our business could have a material adverse impact on our business, financial position, results of operations and cash flows. As previously disclosed, our Medical Segment (which has not generated any revenues to date) substantially reduced its research and development (“R&D”) activities due to the need for capital to fund such activities. Our Medical Segment continues to seek various sources in order to raise this capital or partners willing to provide the funding for its R&D activities. We anticipate that our Medical Segment R&D activities will be limited until the necessary capital is obtained through its own credit facility or additional equity raise or obtaining partners willing to provide funding for its R&D activities. If the Medical Segment is unable to raise the necessary capital, the Medical Segment could be required to further reduce, delay or eliminate its R&D program.

We are continually reviewing methods to raise additional capital to supplement our liquidity requirements, when needed, and reducing our operating costs. We are committed to further reducing operating costs to bring them in line with revenue levels, when needed. Further, our recently implemented strategic plan, which includes expansion into both commercial and international markets to increase revenues in our Treatment and Services Segments to offset the uncertainties of government spending in the United States of America and increasing our overall contract bid/win ratio, is beginning to show success. As previously disclosed, during May 2019, our wholly-owned subsidiary, Perma-Fix Canada, Inc. (within our Services Segment) entered into a Task Order Agreement with the Canadian Nuclear Laboratories, LTD. ("CNL"), with a value of approximately $8,500,000 (U.S dollar), for remediation work at specific sites within Ontario, Canada through 2019. Additionally, in late July 2019, we entered into an additional Task Order Agreement with CNL with a value of approximately $3,000,000 (U.S. dollar), for remediation work at additional specific sites within Ontario, Canada through 2019. We believe that the full implementation of our strategic plan should be accomplished over the next few years, and when fully implemented, we believe it should improve our revenue and liquidity and increase our shareholder values.

Results of Operations

The reporting of financial results and pertinent discussions are tailored to our three reportable segments: The Treatment, Services, and Medical Segments. Our Medical Segment has not generated any revenue and all costs incurred are included within R&D.

Summary – Three and Six Months Ended June 30, 2019 and 2018

	Three Months Ended June 30,				Six Months Ended June 30,			
Consolidated (amounts in thousands)	2019	%	2018	%	2019	%	2018	%
Net revenues	$ 17,135	100.0	$ 13,160	100.0	$ 28,843	100.0	$ 25,817	100.0
Cost of goods sold	13,864	80.9	11,117	84.5	23,071	80.0	20,454	79.2
Gross profit	3,271	19.1	2,043	15.5	5,772	20.0	5,363	20.8
Selling, general and administrative	2,705	15.8	2,640	20.1	5,603	19.4	5,420	21.0
Research and development	223	1.3	219	1.6	450	1.6	451	1.8
Gain on disposal of property and equipment	(1)	—	(17)	(.1)	(1)	—	(25)	(.1)
Loss from operations	344	2.0	(799)	(6.1)	(280)	(1.0)	(483)	(1.9)
Interest income	107	.6	81	.6	188	.7	130	.5
Interest expense	(107)	(.6)	(62)	(.5)	(194)	(.7)	(115)	(.4)
Interest expense-financing fees	(60)	(.4)	(9)	—	(70)	(.3)	(18)	(.1)
Other	95	.6	—	—	224	.8	—	—
Net gain on exchange offer of Series B Preferred Stock of subsidiary	—	—	1,596	12.1	—	—	1,596	6.2
Income (loss) from continuing operations before taxes	379	2.2	807	6.1	(132)	(.5)	1,110	4.3
Income tax expense	6	—	19	.1	45	.1	70	.3
Income (loss) from continuing operations	$ 373	2.2	$ 788	6.0	$ (177)	(.6)	$ 1,040	4.0

Revenues

Consolidated revenues increased $3,975,000 for the three months ended June 30, 2019, compared to the three months ended June 30, 2018, as follows:

(In thousands)	2019	% Revenue	2018	% Revenue	Change	% Change
Treatment						
Government waste	$ 6,042	35.3	$ 5,578	42.4	$ 464	8.3
Hazardous/non-hazardous (1)	1,686	9.8	1,604	12.2	82	5.1
Other nuclear waste	2,366	13.8	1,964	14.9	402	20.5
Total	10,094	58.9	9,146	69.5	948	10.4
Services						
Nuclear services	6,186	36.1	3,408	25.9	2,778	81.5
Technical services	855	5.0	606	4.6	249	41.1
Total	7,041	41.1	4,014	30.5	3,027	75.4
Total	$ 17,135	100.0	$ 13,160	100.0	$ 3,975	30.2

1) Includes wastes generated by government clients of $657,000 and $433,000 for the three month ended June 30, 2019 and the corresponding period of 2018, respectively.

Treatment Segment revenue increased $948,000 or 10.4 % for the three months ended June 30, 2019 over the same period in 2018. The increase in revenue generated from government clients was primarily due to higher averaged price waste resulting from revenue mix. The increase in other nuclear waste revenue was primarily due to higher waste volume. Services Segment revenue increased by $3,027,000 or 75.4% in the three months ended June 30, 2019 from the corresponding period of 2018. The increase in our Services Segment revenue was primarily due to the award of several contracts/task orders for project work in the latter part of the first quarter of 2019 and into the second quarter of 2019 as previously disclosed. Our Services Segment revenues are project based; as such, the scope, duration and completion of each project vary. As a result, our Services Segment revenues are subject to differences relating to timing and project value.

Consolidated revenues increased $3,026,000 for the six months ended June 30, 2019, as compared to the six months ended June 30, 2018, as follows:

(In thousands)	2019	% Revenue	2018	% Revenue	Change	% Change
Treatment						
Government waste	$ 13,401	46.5	$ 11,706	45.3	$ 1,695	14.5
Hazardous/non-hazardous (1)	3,308	11.4	2,840	11.0	468	16.5
Other nuclear waste	3,290	11.4	3,559	13.8	(269)	(7.6)
Total	19,999	69.3	18,105	70.1	1,894	10.5
Services						
Nuclear services	7,231	25.1	6,593	25.6	638	9.7
Technical services	1,613	5.6	1,119	4.3	494	44.1
Total	8,844	30.7	7,712	29.9	1,132	14.7
Total	$ 28,843	100.0	$ 25,817	100.0	$ 3,026	11.7

1) Includes wastes generated by government clients of $1,268,000 and $840,000 for the six month ended June 30, 2019 and the corresponding period of 2018, respectively.

Treatment Segment revenue increased $1,894,000 or 10.5 % for the six months ended June 30, 2019 over the same period in 2018. The revenue increase was primarily due to higher revenue generated from government clients due to higher averaged price waste resulting from revenue mix. The increase in hazardous/non-hazardous waste revenue was primarily due to higher waste volume. Services Segment revenue increased by $1,132,000 or 14.7% in the six months ended June 30, 2019 from the corresponding period of 2018. The increase in our Services Segment revenue was primarily due to the award of several contracts/task orders for project work in the latter part of the first quarter of 2019 and into the second quarter of 2019 as previously disclosed. Our Services Segment revenues are project based; as such, the scope, duration and completion of each project vary. As a result, our Services Segment revenues are subject to differences relating to timing and project value.

Cost of Goods Sold

Cost of goods sold increased $2,747,000 for the quarter ended June 30, 2019, as compared to the quarter ended June 30, 2018, as follows:

(In thousands)	2019	% Revenue	2018	% Revenue	Change
Treatment	$ 7,467	74.0	$ 7,623	83.3	$ (156)
Services	6,397	90.9	3,494	87.0	2,903
Total	$ 13,864	80.9	$ 11,117	84.5	$ 2,747

Cost of goods sold for the Treatment Segment decreased approximately $156,000 or 2.0%. Treatment Segment costs of goods sold for the three months ended June 30, 2019 included additional closure costs recorded in the amount of $165,000 for our M&EC facility due to finalization of closure requirements in connection with the closure of the facility. Treatment Segment's cost of goods sold for the three months ended June 30, 2018 included additional closure costs recorded in the amount of $1,215,000 in connection with the closure of our M&EC facility. Excluding the closure costs in both periods, Treatment Segment cost of goods sold increased $894,000 or 14.0% primarily due to the increase in revenue. Treatment Segment variable costs increased by approximately $754,000 primarily in disposal, transportation, material and supplies and outside services due to higher revenues. Our overall fixed costs were higher by approximately $140,000 resulting from the following: salaries and payroll related expenses were higher by approximately $348,000 from increased headcount; regulatory expenses were higher by $8,000; maintenance expenses were lower by $88,000; and general expenses were lower by approximately $128,000 in various categories. Services Segment cost of goods sold increased $2,903,000 or 83.1% primarily due to higher revenue as discussed above. The increase in Services Segment's cost of goods sold was primarily in salaries and payroll related expenses, travel, and outside services expenses totaling approximately $3,082,000 which was offset by lower material and supplies and disposal costs of $139,000 and lower depreciation expenses of approximately $40,000 as a number of assets became fully depreciated by end of 2018. Included within cost of goods sold is depreciation and amortization expense of $307,000 and $341,000 for the three months ended June 30, 2019, and 2018, respectively.

Cost of goods sold increased $2,617,000 for the six months ended June 30, 2019, as compared to the six months ended June 30, 2018, as follows:

(In thousands)	2019	% Revenue	2018	% Revenue	Change
Treatment	$ 14,415	72.1	$ 13,802	76.2	$ 613
Services	8,656	97.9	6,652	86.3	2,004
Total	$ 23,071	80.0	$ 20,454	79.2	$ 2,617

Cost of goods sold for the Treatment Segment increased by $613,000 or approximately 4.4%. Cost of goods sold for the Treatment Segment for first six months of 2019 included additional closure costs recorded in the amount of approximately $330,000 for our M&EC facility as we finalize closure requirements in connection with the closure of the facility. Treatment Segment's cost of goods sold for the corresponding period of 2018 included additional closure costs recorded in the amount of $1,215,000 in connection with the closure of our M&EC facility. Excluding the closure costs in both periods, Treatment Segment cost of goods sold increased $1,498,000 or 11.9% primarily due to higher revenue. Excluding the closure costs recorded, Treatment Segment variable costs increased by $916,000 primarily in disposal, transportation, material and supplies and lab costs. Treatment Segment overall fixed costs were higher by approximately $582,000 resulting from the following: salaries and payroll related expenses were higher by approximately $802,000 resulting from higher headcount; travel expenses were higher by approximately $42,000; maintenance expense was lower by $139,000; and general expenses were lower by approximately $123,000 in various categories. Services Segment cost of goods sold increased $2,004,000 or 30.1% primarily due to higher revenue as discussed above. The increase in Services Segment's cost of goods sold was primarily in salaries and payroll related expenses, travel, and outside services expenses totaling approximately $2,551,000 which was offset by lower material and supplies and disposal costs of $466,000 and lower depreciation expenses of approximately $81,000 as a number of assets became fully depreciated by end of 2018. Included within cost of goods sold is depreciation and amortization expense of $617,000 and $694,000 for the six months ended June 30, 2019, and 2018, respectively.

Gross Profit

Gross profit for the quarter ended June 30, 2019 increased $1,228,000 over the same period in 2018, as follows:

(In thousands)	2019	% Revenue	2018	% Revenue	Change
Treatment	$ 2,627	26.0	$ 1,523	16.7	$ 1,104
Services	644	9.1	520	13.0	124
Total	$ 3,271	19.1	$ 2,043	15.5	$ 1,228

Treatment Segment gross profit increased $1,104,000 or 72.5% and gross margin increased to 26.0% from 16.7%. Excluding the $165,000 and $1,215,000 in additional closure costs recorded as discussed previously in connection with the closure of our M&EC facility in each of the quarters ended June 30, 2019 and 2018, respectively, gross profit increased $54,000 or 2.0% and gross margin decreased to 27.7% from 29.9% primarily due to revenue mix. In the Services Segment, the increase in gross profit of $124,000 or 23.8% was primarily due to the increase in revenue. Gross margin decreased to 9.1% from 13.0%. Our overall Services Segment gross margin is impacted by our current projects which are competitively bid on and will therefore, have varying margin structures.

Gross profit for the six months ended June 30, 2019 increased $409,000 over 2018, as follows:

(In thousands)	2019	% Revenue	2018	% Revenue	Change
Treatment	$ 5,584	27.9	$ 4,303	23.8	$ 1,281
Services	188	2.1	1,060	13.7	(872)
Total	$ 5,772	20.0	$ 5,363	20.8	$ 409

Treatment Segment gross profit increased $1,281,000 or 29.8% and gross margin increased to 27.9% from 23.8%. Excluding the additional closure costs recorded as discussed previously in connection with the closure of our M&EC facility, gross profit increased 396,000 or 7.2% and gross margin decreased to 29.6% from 30.5% primarily due revenue mix. In the Services Segment, gross profit decreased $872,000 or 82.3% and gross margin decreased from 13.7% to 2.1%. Our overall Services Segment gross margin is impacted by our current projects which are competitively bid on and will therefore, have varying margin structures.

Selling, General and Administrative ("SG&A")

SG&A expenses increased $65,000 for the three months ended June 30, 2019, as compared to the corresponding period for 2018, as follows:

(In thousands)	2019	% Revenue	2018	% Revenue	Change
Administrative	$ 1,261	—	$ 1,252	—	$ 9
Treatment	940	9.3	978	10.7	(38)
Services	504	7.2	410	10.2	94
Total	$ 2,705	15.8	$ 2,640	20.1	$ 65

The slight increase in Administrative SG&A was primarily due to the following: salaries and payroll related costs were higher by approximately $14,000; outside services expenses were higher by $8,000 resulting from more consulting/business matters; general expenses were lower by $10,000 in various categories; and travel expenses were lower by $3,000. Treatment SG&A was lower primarily due to the following: outside services expenses were lower by approximately $17,000 resulting from fewer business/consulting matters; general expenses were lower by approximately $65,000 in various categories; payroll related expenses were higher by approximately $27,000; and travel expenses were higher by approximately $17,000. Services Segment SG&A increased by $94,000 primarily due to the higher general expenses by approximately $148,000 offset by lower salaries and payroll related expenses totaling approximately $54,000. Services Segment general expenses for the second quarter of 2018 included a reduction in rent expense resulting from the end of our lease term for our business center office in Knoxville, Tennessee (which was not renewed with the same lessor). Included in SG&A expenses is depreciation and amortization expense of $10,000 and $18,000 for the three months ended June 30, 2019, and 2018, respectively.

SG&A expenses increased $183,000 for the six months ended June 30, 2019, as compared to the corresponding period for 2018, as follows:

(In thousands)	2019	% Revenue	2018	% Revenue	Change
Administrative	$ 2,564	—	$ 2,477	—	$ 87
Treatment	1,978	9.9	1,900	10.5	78
Services	1,061	12.0	1,043	13.5	18
Total	$ 5,603	19.4	$ 5,420	21.0	$ 183

The increase in Administrative SG&A was primarily due to the following: salaries and payroll related costs were higher by approximately $98,000; general expenses were higher by $20,000 in various categories; and outside services were lower by $31,000 resulting from fewer consulting/business matters. Treatment SG&A was higher primarily due to the following: salaries and payroll related expenses were higher by approximately $175,000; travel expenses were higher by approximately $18,000; outside services expenses were lower by $62,000; and general expenses were lower by approximately $53,000 in various categories. Services Segment SG&A increased by $18,000 primarily due to the following: higher general expenses by approximately $131,000; lower salaries and payroll related expenses totaling approximately $97,000; and lower outside services expenses of $16,000. Services Segment general expenses for the six months ended June 30, 2018 included a reduction in rent expense recorded in the second quarter of 2018 resulting from the end of our lease term for our business center office in Knoxville, Tennessee (which was not renewed with the same lessor). Included in SG&A expenses is depreciation and amortization expense of $24,000 and $37,000 for the six months ended June 30, 2019 and 2018, respectively.

R&D

R&D expenses increased $4,000 and decreased $1,000 for the three and six months ended June 30, 2019, respectively, as compared to the corresponding period of 2018.

	Three Months Ended June 30,			Six Months Ended June 30,		
(In thousands)	2019	2018	Change	2019	2018	Change
Administrative	$ 7	$ 33	$ (26)	$ 13	$ 51	$ (38)
Treatment	136	115	21	283	228	55
Services	—	—	—	—	—	—
PF Medical	80	71	9	154	172	(18)
Total	$ 223	$ 219	$ 4	$ 450	$ 451	$ (1)

R&D costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development of new technologies and technological enhancement of new potential waste treatment processes. As disclosed previously, our Medical Segment has ceased a substantial portion of its R&D activities due to the need for substantial capital to fund such activities and we anticipate that our Medical Segment will not resume any substantial R&D activities until it obtains the necessary funding.

Interest Income

The increase in interest income for the three and six months ended June 30, 2019 as compared to the corresponding periods of 2018 of $26,000 and $58,000, respectively, was primarily due to higher interest earned on the finite risk sinking funds resulting from higher interest rates.

Interest Expense

Interest expense increased approximately $45,000 and $79,000 for the three and six months ended June 30, 2019, respectively, as compared to the corresponding period of 2018. The increases in both periods were primarily due to interest on new finance leases which we entered into starting in June of 2018. The increase for the six months period was also due to interest incurred from the April 1, 2019 loan that we entered into with Robert Ferguson in the amount of $2,500,000 (see "Liquidity and Capital Resources – Financing Activities" for further information of this debt).

Interest Expense- Financing Fees

Interest expense-financing fees increased approximately $51,000 and $52,000 for the three and six months ended June 30, 2019, respectively, as compared to the corresponding period of 2018. The increase was primarily due to debt discount/debt issuance costs amortized as financing fees in connection with the issuance of our Common Stock and a purchase Warrant as consideration for the Company receiving the $2,500,000 loan from Robert Ferguson as discussed above (See "Liquidity and Capital Resources – Financing Activities" for further information of this debt discount).

Discontinued Operations and Divestitures

The Company's discontinued operations consist of all our subsidiaries included in our Industrial Segment: (1) subsidiaries divested in 2011 and prior, (2) two previously closed locations, and (3) our PFSG facility is in closure status, which final closure is subject to regulatory approval of necessary plans and permits.

We had net losses of $115,000 and $267,000 for our discontinued operations for the three and six months ended June 30, 2019, respectively (net of taxes of $0 for each period). We had net losses of $206,000 and $363,000 for our discontinued operations for the three and six months ended June 30, 2018, respectively (net of taxes of $0 for each period). The net losses for the three and six months ended June 30, 2018 included an increase of approximately $50,000 in remediation reserve at our Perma-Fix of Dayton ("PFD") subsidiary due to reassessment of the remediation reserve.

Liquidity and Capital Resources

Our cash flow requirements during the six months ended June 30, 2019 were primarily financed by our operations and credit facility availability. Our cash flow requirements for the next twelve months will consist primarily of general working capital needs, scheduled principal payments on our debt obligations, remediation projects, planned capital expenditures, and remaining spending requirements in connection with the closure of our M&EC facility. We plan to fund these requirements from our operations, credit facility availability, loan proceeds of $2,500,000 that we received on April 1, 2019 from a loan that we consummated (see "Financing Activities" below for further information of the agreement and note), and the receipt of the $5,000,000 in finite risk sinking funds from AIG in July 2019 resulting from the closure of our M&EC facility (see a discussion of this finite risk sinking in "Insurance" below). We continue to explore all sources of increasing our capital to supplement our liquidity requirements, when needed, and to improve our revenue and working capital. We are continually reviewing operating costs and are committed to further reducing operating costs to bring them in line with revenue levels, when necessary. Although there are no assurances, we believe that our cash flows from operations, our available liquidity from our credit facility, loan proceeds of $2,500,000 received from the April 1, 2019 loan described above, and the $5,000,000 in finite risk sinking funds received in July 2019 from AIG should be sufficient to fund our operations for the next twelve months. As previously discussed, our recently implemented strategic plan, which includes expansion into international market and increasing our contract bid/win ratio, is beginning to show success, which we believe will help improve our results and liquidity. We further anticipate that over the next few years, we should be able to fully implement our strategic plan. As previously disclosed, our Medical Segment substantially reduced its R&D activities due to the need for capital to fund such activities. We continue to seek various sources of potential funding for our Medical Segment. We anticipate that our Medical Segment will not resume full R&D activities until it obtains the necessary funding through obtaining its own credit facility or additional equity raise or obtaining new partners willing to fund its R&D activities. If the Medical Segment is unable to raise the necessary capital, the Medical Segment could be required to further reduce, delay or eliminate its R&D program.

The following table reflects the cash flow activities during the first six months of 2019:

(In thousands)		
Cash used in operating activities of continuing operations	$	(863)
Cash used in operating activities of discontinued operations		(334)
Cash used in investing activities of continuing operations		(280)
Cash provided by investing activities of discontinued operations		44
Cash provided by financing activities of continuing operations		1,180
Effect of exchange rate changes in cash		15
Decrease in cash and finite risk sinking fund (restricted cash)	$	(238)

At June 30, 2019, we were in a positive cash position with no revolving credit balance. At June 30, 2019, we had cash on hand of approximately $384,000, which reflects primarily account balances of our foreign subsidiaries totaling approximately $379,000.

Operating Activities

Accounts receivable, net of allowances for doubtful accounts, totaled $7,747,000 at June 30, 2019, an increase of $12,000 from the December 31, 2018 balance of $7,735,000. The decrease was primarily due to timing of invoicing and timing of accounts receivable collection. We provide a variety of payment terms to our customers; therefore, our accounts receivable are impacted by these terms and the related timing of accounts receivable collections.

Accounts payable, totaled $9,640,000 at June 30, 2019, an increase of $4,143,000 from the December 31, 2018 balance of $5,497,000. Our accounts payable has been heavily impacted by closure related expenses for our M&EC facility which are pending payment. The increase in accounts payable was also attributed to the significant increase in revenue within our Services Segment in the second quarter of 2019. Additionally, our accounts payable are impacted by the timing of payments as we are continually managing payment terms with our vendors to maximize our cash position throughout all segments.

We had a working capital deficit of $480,000 (which included working capital of our discontinued operations) at June 30, 2019 as compared to a working capital deficit of $6,753,000 at December 31, 2018. The improvement in our working capital was primarily the result of the reclassification of $5,000,000 of our finite risk sinking funds at June 30, 2019 included in other long term assets on the accompanying Consolidated Balance Sheets to finite risk sinking funds included in current assets on the accompanying Consolidated Balance Sheet (see “Liquidity and Capital Resources – Insurance” below for a discussion of this finite risk sinking funds reclassification). Additionally, the reduction in the monthly principal term loan payment from approximately $101,600 to $35,547 resulting from an amendment that we entered into with our lender on June 20, 2019 improved our working capital (Liquidity and Capital Resources – Financing Activities” below for a discussion of this amendment to our loan agreement).

Investing Activities

For the six months ended June 30, 2019, our purchases of capital equipment totaled approximately $334,000, of which $22,000 was financed, with the remaining funded from cash from operations and our credit facility. These expenditures were made primarily for our Treatment Segment. We have budgeted approximately $1,500,000 for 2019 capital expenditures for our Treatment and Services Segments to maintain operations and regulatory compliance requirements and continued footprint expansion for one of our Treatment Segment facilities. Certain of these budgeted projects may either be delayed until later years or deferred altogether. We have traditionally incurred actual capital spending totals for a given year at less than the initial budgeted amount. We plan to fund our capital expenditures from cash from operations and/or financing. The initiation and timing of projects are also determined by financing alternatives or funds available for such capital projects.

Financing Activities

We entered into an Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated October 31, 2011 (“Amended Loan Agreement”), with PNC National Association (“PNC”), acting as agent and lender. The Amended Loan Agreement, as subsequently amended (“Revised Loan Agreement”), provides us with the following credit facility with a maturity date of March 24, 2021: (a) up to $12,000,000 revolving credit (“revolving credit”) and (b) a term loan (“term loan”) of approximately $6,100,000, which requires monthly installments of approximately $101,600 (based on a seven-year amortization). The maximum that we can borrow under the revolving credit is based on a percentage of eligible receivables (as defined) at any one time reduced by outstanding standby letters of credit and borrowing reductions that our lender may impose from time to time.

On March 29, 2019, we entered into an amendment to our Revised Loan Agreement with our lender under the credit facility which provided the following:

- waived our failure to meet the minimum quarterly fixed charge coverage ratio (“FCCR”) requirement for the fourth quarter of 2018;
- waived the quarterly FCCR testing requirement for the first quarter of 2019;
- revised the methodology to be used in calculating the FCCR in each of the second and third quarters of 2019 (with continued requirement to maintain a minimum 1.15:1 ratio in each of the quarters);
- revised the minimum Tangible Adjusted Net Worth requirement (as defined in the Revised Loan Agreement) from $26,000,000 to $25,000,000;
- eliminated the London Inter Bank Offer Rate (“LIBOR”) interest payment option of paying annual rate of interest due on our term loan and revolving credit until we become compliant with our FCCR requirement again. Prior to this amendment, we had the option of paying annual rate of interest due on the revolving credit at prime (5.50% at March 31, 2019) plus 2% or LIBOR plus 3% and the term loan at prime plus 2.5% or LIBOR plus 3.5%;
- provided consent for the $2,500,000 loan that we entered into with Robert Ferguson as discussed below. We are not allowed to make any principal prepayment on this loan until we receive the restricted finite risk sinking funds of approximately $5,000,000 held as collateral by AIG under our financial assurance policy (see “Insurance” below for a discussion of the receipt of this $5,000,000 finite risk sinking funds below); and
- revised the annual rate used to calculate the Facility Fee (as defined in the Revised Loan Agreement) (unused revolving credit line fee) from 0.250% to 0.375%.

On June 20, 2019, we entered into another amendment to our Revised Loan Agreement with our lender under the credit facility which provided the following, among other things:

- removal of the FCCR calculation requirement for the second, third and fourth quarter of 2019. Starting in the first quarter of 2020, we will again be required to maintain a minimum FCCR of not less than 1.15 to 1.0 for the four quarter period ending March 31, 2020 and for each fiscal quarter thereafter;
- requires us to maintain a minimum Adjusted Earnings Before Interest, Taxes, Depreciation and Amortization (" Adjusted EBITDA" as defined in the Amendment) of at least (i) $475,000 for the one quarter period ending June 30, 2019; (ii) $2,350,000 for the two quarter period ending September 30, 2019; and (iii) $3,750,000 for the three quarter period ending December 31, 2019;
- immediate release of $450,000 of the $1,000,000 indefinite reduction in borrowing availability that PNC had previously imposed. Our lender will release another $300,000 of the remaining $550,000 reduction in borrowing availability if we meet our minimum Adjusted EBITDA requirement for the quarter ending September 30, 2019 as discussed above, in addition to us having received no less than $4,000,000 of the restricted finite risk sinking funds held as collateral by AIG under our financial assurance policy. Our lender will release the final $250,000 reduction in borrowing availability if we meet our Adjusted EBITDA requirement for the three quarter period ending December 31, 2019; and
- reduce the term loan monthly principal payment starting July 1, 2019 from $101,600 to approximately $35,547, with the remaining balance of the term loan due at the maturity of the Revised Loan Agreement which is March 24, 2021.

Most of the other terms of the Revised Loan Agreement, as amended, remain principally unchanged. In connection with amendment dated March 29, 2019 and June 20, 2019, we paid our lender a fee of $20,000 and $50,000, respectively.

Pursuant to the Revised Loan Agreement, as amended, we may terminate the Revised Loan Agreement, as amended, upon 90 days' prior written notice upon payment in full of its obligations under the Revised Loan Agreement, as amended. No early termination fee shall apply if we pay off our obligations after March 23, 2019.

At June 30, 2019, the borrowing availability under our revolving credit was approximately $3,463,000, based on our eligible receivables and includes an indefinite reduction of borrowing availability of $550,000 that our lender has imposed. Our borrowing availability under our revolving credit was also reduced by outstanding standby letters of credit totaling approximately $2,639,000.

Our credit facility with our lender contains certain financial covenants, along with customary representations and warranties. A breach of any of these financial covenants, unless waived by our lender, could result in a default under our credit facility allowing our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. As discussed above, our lender waived/removed our FCCR testing requirement for each of the quarters in 2019. We met our "Adjusted EBITDA" minimum requirement in the second quarter of 2019 in accordance to the amendment dated June 20, 2019 as discussed above. Additionally, we met our remaining financial covenant requirements in the first and second quarters of 2019. We expect to meet our financial covenant requirements in the next twelve months; however, if we fail to meet any of our financial covenant requirements and our lender does not further waive the non-compliance or revise our covenant so that we are in compliance, our lender could accelerate the repayment of borrowings under our credit facility. In the event that our lender accelerates the payment of our borrowings, we may not have sufficient liquidity to repay our debt under our credit facility and other indebtedness.

On April 1, 2019, we completed a lending transaction with Robert Ferguson (the "Lender"), whereby we borrowed from the Lender the sum of $2,500,000 pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the "Loan"). The Lender is a shareholder of the Company. The Lender also currently serves as a consultant to the Company in connection with the Test Bed Initiatives at our Perma-Fix Northwest Richland, Inc. facility. The proceeds from the Loan are being used for general working capital purposes. The Loan is unsecured, with a term of two years with interest payable at a fixed interest rate of 4.00% per annum. The Loan provides for monthly payments of accrued interest only during the first year of the Loan, with the first interest payment due May 1, 2019 and monthly payments of approximately $208,333 in principal plus accrued interest starting in the second year of the Loan. The Loan also provides for prepayment of principal payments over the term of the Loan without penalty. In connection with the above Loan, the Lender agreed under the terms of the Loan and a Subordination Agreement with our credit facility lender, to subordinate payment under the Loan, and agreed that the Loan will be junior in right of payment to the credit facility in the event of default or bankruptcy or other insolvency proceeding by us. In connection with this capital raise transaction described above and consideration for us receiving the Loan, we issued a Warrant (the "Warrant") to the Lender to purchase up to 60,000 shares of our Common Stock at an exercise price of $3.51 per share, which was the closing bid price for a share of our Common Stock on NASDAQ.com immediately preceding the execution of the Loan and Warrant. The Warrant is exercisable six months from April 1, 2019 and expires on April 1, 2024. The fair value of the Warrant was estimated to be approximately $93,000 using the Black-Scholes option pricing model with the following assumptions: 50.76% volatility, risk free interest rate of 2.31%, an expected life of five years and no dividends. As further consideration for this capital raise transaction relating to the Loan, we also issued 75,000 shares of our Common Stock to the Lender. We determined the fair value of the 75,000 shares of Common Stock to be approximately $263,000 which was based on the closing bid price for a share of our Common Stock on NASDAQ.com immediately preceding the execution of the Loan, pursuant to the Loan and Securities Purchase Agreement. The fair value of the Warrant and Common Stock and the related closing fees incurred totaling approximately $396,000 from the transaction was recorded as a debt discount/debt issuance costs, which is being amortized over the term of the loan as interest expense – financing fees. The 75,000 shares of Common Stock, the Warrant and the 60,000 shares of Common Stock that may be purchased under the Warrant will be and was issued in a private placement that was exempt from registration under Rule 506 and/or Sections 4(a)(2) and 4(a)(5) of the Securities Act of 1933, as amended (the "Act") and bear a restrictive legend against resale except in a transaction registered under the Act or in a transaction exempt from registration thereunder.

Upon default, the Lender will have the right to elect to receive in full and complete satisfaction of our obligations under the Loan either: (a) the cash amount equal to the sum of the unpaid principal balance owing under the loan and all accrued and unpaid interest thereon (the "Payoff Amount") or (b) upon meeting certain conditions, the number of whole shares of our Common Stock (the "Payoff Shares") determined by dividing the Payoff Amount by the dollar amount equal to the closing bid price of our Common Stock on the date immediately prior to the date of default, as reported or quoted on the primary nationally recognized exchange or automated quotation system on which our Common Stock is listed; provided however, that the dollar amount of such closing bid price shall not be less than $3.51, the closing bid price for our Common Stock as disclosed on NASDAQ.com immediately preceding the signing of this loan agreement.

If issued, the Payoff Shares will not be registered and the Lender will not be entitled to registration rights with respect to the Payoff Shares. The aggregate number of shares, warrant shares, and Payoff Shares that are or will be issued to the Lender pursuant to the Loan, together with the aggregate shares of our Common Stock and other voting securities owned by the Lender or which may be acquired by the Lender as of the date of issuance of the Payoff Shares, shall not exceed the number of shares of our Common Stock equal to 14.9% of the number of shares of our Common Stock issued and outstanding as of the date immediately prior to the default, less the number of shares of our Common Stock owned by the Lender immediately prior to the date of such default plus the number of shares of our Common Stock that may be acquired by the Lender under warrants and/or options outstanding immediately prior to the date of such default.

On May 13, 2019, we filed a shelf registration statement on Form S-3 with the U.S. Securities and Exchange Commission ("SEC"), which was declared effective by the SEC on May 22, 2019 at 4:00 p.m. The shelf registration statement gives us the ability to sell up to 2,500,000 shares of our Common Stock from time to time and through one or more methods of distribution, subject to market conditions and the Company's capital needs at that time. The terms of any offering under the registration statement will be established at the time of the offering. The Company does not have any immediate plans or current commitments to issue shares under the registration statement.

Insurance

We have a 25-year finite risk insurance policy entered into in June 2003 ("2003 Closure Policy") with AIG, which provides financial assurance to the applicable states for our permitted facilities in the event of unforeseen closure. The 2003 Closure Policy, as amended, provides for a maximum allowable coverage of $39,000,000 and has available capacity to allow for annual inflation and other performance and surety bond requirements. At June 30, 2019, our financial assurance coverage amount under this 2003 Closure Policy totaled approximately $30,549,000. The Company had contributed $16,159,000 and $15,971,000 in finite risk sinking funds ("sinking funds") related to this policy in other long term assets on the accompanying Consolidated Balance Sheets at June 30, 2019 and December 31, 2018, respectively, which includes interest earned of $1,688,000 and $1,500,000 on the sinking funds as of June 30, 2019 and December 31, 2018, respectively (see a discussion of the subsequent reclassification of $5,000,000 in sinking funds at June 30, 2019 initially included in other long term assets on the accompanying Consolidated Balance Sheet to sinking funds in current assets on the accompanying Consolidated Balance Sheets at June 30, 2019 below). Interest income for the three and six months ended June 30, 2019 was approximately $107,000 and $188,000, respectively. Interest income for the three and six months ended June 30, 2018 was approximately $81,000 and $131,000, respectively. If we so elect, AIG is obligated to pay us an amount equal to 100% of the sinking fund account balance in return for complete release of liability from both us and any applicable regulatory agency using this policy as an instrument to comply with financial assurance requirements.

As previously discussed, we had been working with AIG and certain government regulators which would allow for the release of approximately $5,000,000 of the sinking funds held as collateral under the 2003 Closure Policy upon closure of the M&EC facility. On July 22, 2019, we received the $5,000,000 sinking funds. Accordingly, at June 30, 2019, the Company reclassified $5,000,000 of the $16,159,000 in sinking funds initially included in other long term assets as discussed above on the accompanying Consolidated Balance Sheets to sinking funds included in current assets on the accompanying Consolidated Balance Sheets. The sinking funds received are to be used for general working capital needs. In conjunction with the release of the sinking funds by AIG, total coverage remaining under the 2003 Closure Policy stands at $19,314,000. Additionally, the maximum coverage allowable under the 2003 Closure Policy was amended from $39,000,000 to approximately $28,177,000.

Off Balance Sheet Arrangements

From time to time, we are required to post standby letters of credit and various bonds to support contractual obligations to customers and other obligations, including facility closures. At June 30, 2019, the total amount of standby letters of credit outstanding totaled approximately $2,639,000 and the total amount of bonds outstanding totaled approximately $29,465,000. We also provide closure and post-closure requirements through a financial assurance policy for certain of our Treatment Segment facilities through AIG (See a discussion of this financial assurance policy above).

Critical Accounting Policies and Estimates

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-02, "Leases (Topic 842)," which requires the recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous guidance. The original guidance required application on a modified retrospective basis with the earliest period presented. In July 2018, the FASB issued ASU 2018-11, "Targeted Improvements," to Topic 842 which included an option to not restate comparative periods in transition and elect to use the effective date of Topic 842 as the date of initial application of transition, which the Company elected. As a result of the adoption of Topic 842 on January 1, 2019, the Company recorded both operating lease right-of-use ("ROU") assets of $2,602,000 and operating lease liabilities of $2,622,000. The cumulative-effect adjustment to its beginning accumulated deficit upon adoption of ASU 2016-02 was considered immaterial. The adoption of Topic 842 had an immaterial impact on our Consolidated Statements of Operations and Cash Flows for the six months ended June 30, 2019.

Known Trends and Uncertainties

Significant Customers. Our Treatment and Services Segments have significant relationships with the U.S and Canadian governmental authorities, and continue to enter into contracts, directly as the prime contractor or indirectly for others as a subcontractor, with the government authorities. The U.S Department of Energy ("DOE") and U.S. Department of Defense ("DOD") represent major customers for our Treatment Segment and Services Segments. The contracts that we are a party to with the U.S federal government or with others as a subcontractor to the U.S federal government generally provide that the government may terminate or renegotiate the contracts on 30 days' notice, at the government's election. The contracts/task order agreements that we are a party to with Canadian governmental authorities generally provide that the government authorities may terminate the contracts/task order agreements at any time for any reason for convenience. Our inability to continue under existing contracts that we have with the U.S federal government and Canadian government authorities (directly or indirectly as a subcontractor) or significant reductions in the level of governmental funding in any given year could have a material adverse impact on our operations and financial condition.

We performed services relating to waste generated by government clients (domestic and foreign (primarily Canadian)), either directly as a prime contractor or indirectly for others as a subcontractor to government entities, representing approximately $12,864,000 or 75.1% and $21,857,000 or 75.8% of our total revenues generated during the three and six months ended June 30, 2019, respectively, as compared to $9,461,000 or 71.9% and $19,267,000 or 74.6% of our total revenues generated during the three and six months ended June 30, 2018.

Environmental Contingencies

We are engaged in the waste management services segment of the pollution control industry. As a participant in the on-site treatment, storage and disposal market and the off-site treatment and services market, we are subject to rigorous federal, state and local regulations. These regulations mandate strict compliance and therefore are a cost and concern to us. Because of their integral role in providing quality environmental services, we make every reasonable attempt to maintain complete compliance with these regulations; however, even with a diligent commitment, we, along with many of our competitors, may be required to pay fines for violations or investigate and potentially remediate our waste management facilities.

We routinely use third party disposal companies, who ultimately destroy or secure landfill residual materials generated at our facilities or at a client's site. In the past, numerous third party disposal sites have improperly managed waste and consequently require remedial action; consequently, any party utilizing these sites may be liable for some or all of the remedial costs. Despite our aggressive compliance and auditing procedures for disposal of wastes, we could further be notified, in the future, that we are a potentially responsible party ("PRP") at a remedial action site, which could have a material adverse effect.

Our subsidiaries where remediation expenditures will be made are at three sites within our discontinued operations. While no assurances can be made that we will be able to do so, we expect to fund the expenses to remediate these sites from funds generated from operations.

At June 30, 2019, we had total accrued environmental remediation liabilities of $877,000, of which $40,000 is recorded as a current liability, which reflects a decrease of $10,000 from the December 31, 2018 balance of $887,000. The decrease of $10,000 represents payments on remediation projects at our Perma-Fix of Dayton, Inc. subsidiary.

Item 3. Quantitative and Qualitative Disclosures about Market Risks

Not applicable

Item 4. Controls and Procedures

(a) *Evaluation of disclosure controls and procedures.*

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic reports filed with the Securities and Exchange Commission is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission and that such information is accumulated and communicated to our management. As of the end of the period covered by this report, we carried out an evaluation with the participation of our Principal Executive Officer and Principal Financial Officer. Based on this recent assessment, our Principal Executive Officer and Principal Financial Officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended) were effective as of June 30, 2018

(b) *Changes in internal control over financial reporting.*

Effective January 1, 2019, we adopted ASU No. 2016-02, "Leases (Topic 842)" and ASU 2018-11, "Targeted Improvements" (collectively referred to as "Topic 842"). Although the adoption of Topic 842 did not have a material impact to our Consolidated Statements of Operations and Cash Flows for the six months ended June 30, 2019, we implemented changes to our internal controls related to the lease accounting standards. These changes included performing a comprehensive lease scoping analysis to identify and evaluate each of our lease categories and implementing procedures to calculate ROU assets and lease liabilities values for our leases. There was no other change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during our most recently completed fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings

There are no additional material legal proceedings pending against us and/or our subsidiaries not previously reported by us in Item 3 of our Form 10-K for the year ended December 31, 2018, which is incorporated herein by reference.

Item 1A. Risk Factors

There has been no other material change from the risk factors previously disclosed in our Form 10-K for the year ended December 31, 2018 and Form 10-Q for the three months ended March 31, 2019.

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

On April 1, 2019, we completed a lending transaction with Robert Ferguson (the "Lender"), whereby we borrowed from the Lender the sum of $2,500,000 pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the "Loan"). The Lender is a shareholder of the Company. The Lender also currently serves as a consultant to the Company in connection with the Test Bed Initiatives at our Perma-Fix Northwest Richland, Inc. facility. The proceeds from the Loan are being used for general working capital purposes. The Loan is unsecured, with a term of two years with interest payable at a fixed interest rate of 4.00% per annum. The Loan provides for monthly payments of accrued interest only during the first year of the Loan, with the first interest payment due May 1, 2019 and monthly payments of approximately $208,333 in principal plus accrued interest starting in the second year of the Loan. The Loan also provides for prepayment of principal payments over the term of the Loan without penalty. In connection with the above Loan, the Lender agreed under the terms of the Loan and a Subordination Agreement with our credit facility lender, to subordinate payment under the Loan, and agreed that the Loan will be junior in right of payment to the credit facility in the event of default or bankruptcy or other insolvency proceeding by us. In connection with this capital raise transaction described above and consideration for us receiving the Loan, we issued a Warrant (the "Warrant") to the Lender to purchase up to 60,000 shares of our Common Stock at an exercise price of $3.51 per share, which was the closing bid price for a share of our Common Stock on NASDAQ.com immediately preceding the execution of the Loan and Warrant. The Warrant is exercisable six months from April 1, 2019 and expires on April 1, 2024. As further consideration for this capital raise transaction relating to the Loan, we also issued 75,000 shares of our Common Stock to the Lender. The 75,000 shares of Common Stock, the Warrant and the 60,000 shares of Common Stock that may be purchased under the Warrant will be and was issued in a private placement that was exempt from registration under Rule 506 and/or Sections 4(a)(2) and 4(a)(5) of the Securities Act of 1933, as amended (the "Act") and bear a restrictive legend against resale except in a transaction registered under the Act or in a transaction exempt from registration thereunder.

Upon default, the Lender will have the right to elect to receive in full and complete satisfaction of our obligations under the Loan either: (a) the cash amount equal to the sum of the unpaid principal balance owing under the loan and all accrued and unpaid interest thereon (the "Payoff Amount") or (b) upon meeting certain conditions, the number of whole shares of our Common Stock (the "Payoff Shares") determined by dividing the Payoff Amount by the dollar amount equal to the closing bid price of our Common Stock on the date immediately prior to the date of default, as reported or quoted on the primary nationally recognized exchange or automated quotation system on which our Common Stock is listed; provided however, that the dollar amount of such closing bid price shall not be less than $3.51, the closing bid price for our Common Stock as disclosed on NASDAQ.com immediately preceding the signing of this loan agreement.

If issued, the Payoff Shares will not be registered and the Lender will not be entitled to registration rights with respect to the Payoff Shares. The aggregate number of shares, warrant shares, and Payoff Shares that are or will be issued to the Lender pursuant to the Loan, together with the aggregate shares of our Common Stock and other voting securities owned by the Lender or which may be acquired by the Lender as of the date of issuance of the Payoff Shares, shall not exceed the number of shares of our Common Stock equal to 14.9% of the number of shares of our Common Stock issued and outstanding as of the date immediately prior to the default, less the number of shares of our Common Stock owned by the Lender immediately prior to the date of such default plus the number of shares of our Common Stock that may be acquired by the Lender under warrants and/or options outstanding immediately prior to the date of such default.

Item 6. Exhibits

(a) **Exhibits**

4.1 Loan and Securities Purchase Agreement, dated April 1, 2019 between Robert L. Ferguson and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 4.15 to the Company's 2018 Form 10-K filed on April 1, 2019.

4.2 Common Stock Purchase Warrant dated April 1, 2019 for Robert L. Ferguson, as incorporated by reference from Exhibit 4.16 to the Company's 2018 Form 10-K filed on April 1, 2019.

4.3 Eleventh Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement and Waiver between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated March 29, 2019, as incorporated by reference from Exhibit 4.14 to the Company's 2018 Form 10-K filed on April 1, 2019.

4.4	Twelfth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated June 20, 2019, as incorporated by reference from Exhibit 4.1 to the Company's Form 8-K filed on June 21, 2019.
10.1	Task Order Agreement for Small Scales Remediation Package between Canadian Nuclear Laboratories LTD and Perma-Fix Canada Inc., as incorporated by reference from Exhibit 10.1 to the Company's Form 10-Q for the three months ended March 31, 2019 filed on May 9, 2019. CERTAIN INFORMATION WITHIN SCHEDULE 2 – PRICE INFORMATION OF THIS EXHIBIT HAS BEEN EXCLUDED FROM THE EXHIBIT BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.
31.1	Certification by Mark Duff, Chief Executive Officer of the Company pursuant to Rule 13a-14(a) or 15d-14(a).
31.2	Certification by Ben Naccarato, Chief Financial Officer of the Company pursuant to Rule 13a-14(a) or 15d-14(a).
32.1	Certification by Mark Duff, Chief Executive Officer of the Company furnished pursuant to 18 U.S.C. Section 1350.
32.2	Certification by Ben Naccarato, Chief Financial Officer of the Company furnished pursuant to 18 U.S.C. Section 1350.
101.INS	XBRL Instance Document*
101.SCH	XBRL Taxonomy Extension Schema Document*
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document*
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document*
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document*
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document*

* Pursuant to Rule 406T of Regulation S-T, the Interactive Data File in Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus for purposes of Section 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purpose of Section 18 of the Securities Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.

SIGNATURES

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

PERMA-FIX ENVIRONMENTAL SERVICES

Date: August 8, 2019

By: */s/ Mark Duff*
Mark Duff
President and Chief (Principal) Executive Officer

Date: August 8, 2019

By: */s/ Ben Naccarato*
Ben Naccarato
Chief (Principal) Financial Officer

EXHIBIT 31.1

CERTIFICATIONS

I, Mark Duff, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Perma-Fix Environmental Services, 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 the internal control over financial reporting, to the registrant's auditors and the audit committee of 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: August 8, 2019

/s/ Mark Duff
Mark Duff
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATIONS

I, Ben Naccarato, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Perma-Fix Environmental Services, 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 the internal control over financial reporting, to the registrant's auditors and the audit committee of 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: August 8, 2019

/s/ Ben Naccarato

Ben Naccarato
Vice President and Chief Financial Officer

EXHIBIT 32.1

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 of Perma-Fix Environmental Services, Inc. ("PESI") on Form 10-Q for the quarter ended June 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Form 10-Q"), I, Mark Duff, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Form 10-Q fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §78m or §78o(d)); and

(2) The information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: August 8, 2019

/s/ Mark Duff
Mark Duff
President and Chief Executive Officer

This certification is furnished to the Securities and Exchange Commission solely for purpose of 18 U.S.C. §1350 subject to the knowledge standard contained therein, and not for any other purpose.

EXHIBIT 32.2

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 Annual Report of Perma-Fix Environmental Services, Inc. ("PESI") on Form 10-Q for the quarter ended June 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Form 10-Q"), I, Ben Naccarato, Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Form 10-Q fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §78m or §78o(d)); and

(2) The information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: August 8, 2019

/s/ Ben Naccarato

Ben Naccarato
Vice President and Chief Financial Officer

This certification is furnished to the Securities and Exchange Commission solely for purpose of 18 U.S.C. §1350 subject to the knowledge standard contained therein, and not for any other purpose.