2021 Annual Report

To Our Valued Shareholders,

Despite the challenges in 2021 due to the pandemic, we accomplished a number of important initiatives that we believe have set the stage for growth in 2022.

Within the Services Segment, we were awarded several strategic and high-profile projects. As a result, we have over $58 million in project backlog as of May 2022, which we believe provides us a solid foundation for the balance of this year as these projects ramp up.

We have also completed the transition and start-up of several service projects that are close to full operations. In addition, we anticipate the federal government will be awarding new projects in the second and third quarters. Moreover, we have been selected on several new Indefinite Delivery/Indefinite Quantity (IDIQ) or multi-award task order contracts that include large funding ceilings and open up new markets with approved Federal budgets. Finally, we're bidding on some much larger service projects within the U.S. Department of Energy (DOE) as part of larger teams that will likely be announced later this year. We believe these and other initiatives could contribute meaningful recurring revenues and cash flow on multi-year projects.

Within the Treatment Segment, we are seeing increased demand for waste treatment capacity within both the government and commercial sectors, which we believe bodes well for 2022. We were also successful in completing facility upgrades and technology deployments to support expanded revenue streams within this segment.

Beyond our base business, we are very excited about potential opportunities related to the Test Bed Initiative (TBI), also known as the Low-Level Waste Offsite Disposal Project in support of the DOE Hanford Tank disposition mission. The second phase of the TBI project, to include extraction, shipment and disposal of 2,000 gallons of tank waste through our Perma-Fix Northwest facility located in Richland, Washington, is anticipated to commence in the second half of 2022.

According to a recent report by the Federally Funded Research and Development Center (FFRDC), the implementation of off-site grouting to address the 56 million gallons of tank waste at Hanford would potentially save the DOE as much as $95 billion dollars. We believe this project holds significant revenue potential as Perma-Fix maintains the only capability to provide this treatment in the vicinity of the Hanford site.

In summary, the COVID-19 pandemic had a significant impact on our business in 2021. Although the federal government was slow to procure new task orders due to the pandemic, these projects have not gone away. Rather, the federal government has begun announcing new projects that have been on hold. There is significant pent-up demand that we anticipate to be able to capitalize on in a meaningful way.

We remain encouraged by the outlook for the balance of the year. We believe we are well-positioned to resume and, ultimately, exceed the performance levels we had attained prior to the pandemic through increased bidding activities, waste treatment capability expansion, and improved federal budgets.

In addition to our ongoing commitment to the highest levels of corporate governance, our management and Board of Directors are fully committed to further enhancing our Environmental, Social and Governance (ESG) policies, in line with our past practices of diversity, inclusion and environmental stewardship.

We truly believe our best years are ahead and we look forward to advancing our mission of addressing some of the nation's most pressing environmental challenges. I would like to thank our shareholders, employees and Board of Directors for the ongoing support.

Sincerely,

Mark Duff
President and Chief Executive Officer

*See certain forward-looking statements in the "Corporate Information" section.

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

FORM 10-K

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2021
or
[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission File No. 1-11596

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, #250, Atlanta, GA	**30350**
(Address of principal executive offices)	*(Zip Code)*

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

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, $.001 Par Value	PESI	NASDAQ Capital Markets

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
☐ Yes ☒ No

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.
☐ Yes ☒ No

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

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

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

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

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

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

The aggregate market value of the Registrant's voting and non-voting common equity held by nonaffiliates of the Registrant computed by reference to the closing sale price of such stock as reported by NASDAQ as of the last business day of the most recently completed second fiscal quarter (June 30, 2021), was approximately $81,266,400). For the purposes of this calculation, all directors and executive officers of the Registrant (as indicated in Item 12) have been deemed to be affiliates. Such determination should not be deemed an admission that such directors and executive officers, are, in fact, affiliates of the Registrant. The Company's Common Stock is listed on the NASDAQ Capital Markets.

As of February 14, 2022, there were 13,234,430 shares of the registrant's Common Stock, $.001 par value, outstanding.

Documents incorporated by reference: None

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

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PART I

ITEM 1. BUSINESS

Company Overview and Principal Products and Services

Perma-Fix Environmental Services, Inc. (the Company, which may be referred to as we, us, or our), a Delaware corporation incorporated in December 1990, is an environmental and environmental technology know-how company.

The principal element of our business strategy consists of upgrading our facilities within our Treatment Segment to increase efficiency and modernize and expand treatment capabilities to meet the changing markets associated with the waste management industry. Within our Services Segment, we continue to increase competitive procurement effectiveness and broaden the market penetration within both the commercial and government sectors. The Company remains focused on expansion into both commercial and international markets to supplement government spending in the United States of America ("USA"), from which a significant portion of the Company's revenue is derived. This includes new services, new customers and increased market share in our current markets.

As previously disclosed, the Company's Medical Segment (or "PF Medical") business, conducted through the Company's majority-owned Polish subsidiary, Perma-Fix Medical S.A ("PFM Poland"), and PFM Poland's wholly-owned subsidiary, Perma-Fix Medical Corporation, a Delaware corporation ("PFMC"), had not generated any revenue and had substantially reduced research and development ("R&D") activities of the Company's medical isotope production technology due to the need for capital to fund these activities. During December 2021, the Company made the strategic decision to cease all R&D activities under the Medical Segment and sold 100% of its interest in PFM Poland for a nominal amount. As a condition precent to the sale of PFM Poland, the Company acquired PFMC after its conversion to a Delaware limited liability company. As a result of the sale of PFM Poland, the Company deconsolidated PFM Poland from its consolidated financial statements.

COVID-19 Impact

Our 2021 financial results continued to be impacted by COVID-19 resulting in continued delays in waste shipments from certain customers within our Treatment Segment. Additionally, supply chain challenges delayed the deployment of our new waste treatment technology which also negatively impacted our revenue in 2021. Within our Services Segment, we experienced delays in procurement actions and contract awards in the first half of 2021 and work under certain new projects won in the second half of 2021 was curtailed/delayed from the impact of COVID-19, among other things (See "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – COVID-19 Impact" for a full discussion of the impact of COVID-19 on the Company's results of operations).

Segment Information and Foreign and Domestic Operations and Sales

For 2021, the Company has three reportable segments. In accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 280, "Segment Reporting", we define an operating segment as:

- a business activity from which we may earn revenue and incur expenses;
- whose operating results are regularly reviewed by the chief operating decision maker "(CODM") to make decisions about resources to be allocated and assess its performance; and
- for which discrete financial information is available.

TREATMENT SEGMENT reporting includes:

- nuclear, low-level radioactive, mixed (waste containing both hazardous and low-level radioactive waste), hazardous and non-hazardous waste treatment, processing and disposal services primarily through four uniquely licensed (Nuclear Regulatory Commission or state equivalent) and permitted (U.S. Environmental Protection Agency ("EPA") or state equivalent) treatment and storage facilities as follow: Perma-Fix of Florida, Inc. ("PFF"), Diversified Scientific Services, Inc., ("DSSI"),

Perma-Fix Northwest Richland, Inc. (“PFNWR”) and Oak Ridge Environmental Waste Operations Center (“EWOC”); and
- R&D activities to identify, develop and implement innovative waste processing techniques for problematic waste streams.

For 2021, the Treatment Segment accounted for $32,992,000, or 45.7%, of total revenue, as compared to $30,143,000, or 28.6%,, of total revenue for 2020. See “Dependence Upon a Single or Few Customers” for further details and a discussion as to our Segments’ contracts with government clients (domestic and foreign) or with others as a subcontractor to government clients.

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;
    - health physics services including health physicists, radiological engineers, nuclear engineers and health physics technicians support to government and private radioactive materials licensees;
    - integrated Occupational Safety and Health services including industrial hygiene (“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 Occupational Safety and Health Administration (“OSHA”) citation assistance;
    - global technical services providing consulting, engineering (civil, nuclear, mechanical, chemical, radiological and environmental), project management, waste management, environmental, and decontamination and decommissioning (“D&D”) field, technical, and management personnel and services to commercial and government customers; and
    - waste management services to commercial and governmental customers.
- Nuclear services, which include:
    - D&D of government and commercial facilities impacted with radioactive material and hazardous constituents including engineering, technology applications, specialty services, logistics, transportation, processing and disposal; and
    - license termination support of radioactive material licensed and federal facilities over the entire cycle of the termination process: project management, planning, characterization, waste stream identification and delineation, remediation/demolition, final status survey, compliance demonstration, reporting, transportation, disposal and emergency response.
- A company owned equipment calibration and maintenance laboratory that services, maintains, calibrates, and sources (i.e., rental) health physics, IH and customized nuclear, environmental, and occupational safety and health (“NEOSH”) instrumentation.

For 2021, the Services Segment accounted for $39,199,000, or 54.3%, of total revenue, as compared to $75,283,000, or 71.4%, of total revenue for 2020. See “Dependence Upon a Single or Few Customers” for further details and a discussion as to our Segments’ contracts with government clients (domestic and foreign) or with others as a subcontractor to government clients.

MEDICAL SEGMENT (see a discussion of the exit of our business under the Medical Segment during the fourth quarter of 2021 under “Company Overview and Principal Products and Services” above).

Our Treatment and Services Segments provide services to research institutions, commercial companies, public utilities, and governmental agencies (domestic and foreign), including the U.S. Department of Energy (“DOE”) and U.S. Department of Defense (“DOD”). The distribution channels for our services are through direct sales to customers or via intermediaries.

Our corporate office is located at 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

Foreign Revenue and Initiative
Our consolidated revenue for 2021 and 2020 included approximately $9,277,000, or 12.9%, and $5,550,000, or 5.3%, respectively, from Canadian customers.

During March 2022, we signed a joint venture term sheet addressing plans to partner with Springfields Fuels Limited ("SFL"), an affiliate of Westinghouse Electric Company LLC, to develop and manage a nuclear waste-materials treatment facility (the "Facility") in the United Kingdom. The Facility is for the purpose of expanding the partners' waste treatment capabilities for the European nuclear market. It is expected that upon finalization of a partnership agreement, SFL will have an ownership interest of fifty-five (55) percent and our interest will be forty-five (45) percent. The finalization, form and capitalization of this unpopulated partnership is subject to numerous conditions, including but not limited to, completion and execution of a definitive agreement and facility design and the granting of required regulatory, lender or permitting approvals. Upon finalization of this venture, we will be required to make an investment in this venture. The amount of our investment, the period of which it is to be made and the method of funding are to be determined.

Seasonal Factors of our Business
Our operations are generally subject to seasonal factors. See "Risk Factors – Risks Related to our Business and Operations – Our operations are subject to seasonal factors, which causes our revenues to fluctuate" for a discussion of our seasonal factors.

Permits and Licenses
Waste management service companies are subject to extensive, evolving and increasingly stringent federal, state, and local environmental laws and regulations. Such federal, state and local environmental laws and regulations govern our activities regarding the treatment, storage, processing, disposal and transportation of hazardous, non-hazardous and radioactive wastes, and require us to obtain and maintain permits, licenses and/or approvals in order to conduct our waste activities. We are dependent on our permits and licenses discussed below in order to operate our businesses. Failure to obtain and maintain our permits or approvals would have a material adverse effect on us, our operations, and financial condition. The permits and licenses have terms ranging from one to ten years, and provided that we maintain a reasonable level of compliance, renew with minimal effort, and cost. We believe that these permit and license requirements represent a potential barrier to entry for possible competitors.

PFF, located in Gainesville, Florida, operates its hazardous, mixed and low-level radioactive waste activities under a Resource Conservation and Recovery Act ("RCRA") Part B permit, Toxic Substances Control Act ("TSCA") authorization, Restricted RX Drug Distributor-Destruction license, biomedical, and a radioactive materials license issued by the State of Florida.

DSSI, located in Kingston, Tennessee, conducts mixed and low-level radioactive waste storage and treatment activities under RCRA Part B permits and a radioactive materials license issued by the State of Tennessee Department of Environment and Conservation. Co-regulated TSCA Polychlorinated Biphenyl ("PCB") wastes are also managed for PCB destruction under EPA Approval.

PFNWR, located in Richland, Washington, operates a low-level radioactive waste processing facility as well as a mixed waste processing facility. Radioactive material processing is authorized under radioactive materials licenses issued by the State of Washington and mixed waste processing is additionally authorized under a RCRA Part B permit with TSCA authorization issued jointly by the State of Washington and the EPA.

EWOC, located in Oak Ridge, Tennessee, operates a low-level radioactive waste material processing facility. Radioactive material processing is authorized under radioactive material licenses issued by the State of Tennessee Department of Environmental and Conservation, Division of radiological health.

The combination of RCRA Part B hazardous waste permits, TSCA authorizations, and radioactive material licenses held by the Company and its subsidiaries comprising our Treatment Segment is very difficult to

obtain for a single facility and make this Segment unique.

We believe that the permitting and licensing requirements, and the cost to obtain such permits, are barriers to the entry of hazardous waste and radioactive and mixed waste activities as presently operated by our waste treatment subsidiaries. If the permit requirements for hazardous waste treatment, storage, and disposal ("TSD") activities and/or the licensing requirements for the handling of low-level radioactive matters are eliminated or if such licenses or permits were made less rigorous to obtain, we believe such would allow companies to enter into these markets and provide greater competition.

Number of Employees
At December 31, 2021, we employed approximately 286 employees, of whom 275 are full-time employees and 11 are part-time/temporary employees. None of our employees are unionized.

Dependence Upon a Single or Few Customers
Our Treatment and Services Segments have significant relationships with the U.S. governmental authorities. Our Services Segment also had significant relationships with the Canadian government authorities. A significant amount of our revenues from our Treatment and Services Segments are generated indirectly as subcontractors for others who are prime contractors to government authorities, particularly the DOE and DOD, or directly as the prime contractor to government authorities. The contracts that we are a party to with others as subcontractors to the U.S federal government or directly with the U.S federal government generally provide that the government may terminate the contract at any time for convenience at the government's option. The contracts/task order agreements ("TOA") that we are a party to with Canadian governmental authorities also generally provide that the government authorities may terminate the contracts/task order agreements at any time for any reason for convenience. Project work under TOAs with Canadian government authority has substantially been completed. Our inability to continue under existing contracts that we have with U.S 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 indirectly for others as a subcontractor to government entities or directly as a prime contractor to government entities, representing approximately $60,812,000, or 84.2%, of our total revenue during 2021, as compared to $96,582,000, or 91.6%, of our total revenue during 2020.

Revenue generated by us as a subcontractor to a customer for a remediation project performed for a government entity (the DOE) within our Services Segment in 2021 and 2020 accounted for approximately $8,526,000 or 11.8% and $41,011,000 or 38.9% (included in revenues generated relating to government clients above) of our total revenue for 2021 and 2020, respectively. This project was completed in the second quarter of 2021.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, we do not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Competitive Conditions
The Treatment Segment's largest competitor is EnergySolutions which operates treatment facilities in Oak Ridge, TN and Erwin, TN and treatment/disposal facilities for low level radioactive waste in Clive, UT and Barnwell, SC. Waste Control Specialists, which has licensed treatment/disposal capabilities for low level radioactive waste in Andrews, TX, is also a competitor in the treatment market with increasing market share. These two competitors also provide us with options for disposal of our treated nuclear waste. The Treatment Segment treats and disposes of DOE generated waste largely at DOE owned sites. Our Treatment Segment currently solicits business primarily on a North America basis with both government and commercial clients; however, we continue to focus on emerging international markets for additional work.

Our Services Segment is engaged in highly competitive businesses in which a number of our government contracts and some of our commercial contracts are awarded through competitive bidding processes. The extent of such competition varies according to the industries and markets in which our customers operate as well as the geographic areas in which we operate. The degree and type of competition we face is also often influenced by the project specification being bid on and the different specialty skill sets of each bidder for which our Services Segment competes, especially projects subject to the governmental bid process. We also have the ability to prime federal government small business procurements (small business set asides). Based on past experience, we believe that large businesses are more willing to team with small businesses in order to be part of these often-substantial procurements. There are a number of qualified small businesses in our market that will provide intense competition that may provide a challenge to our ability to maintain strong growth rates and acceptable profit margins. For international business there are additional competitors, many from within the country the work is to be performed, making winning work in foreign countries more challenging. If our Services Segment is unable to meet these competitive challenges, it could lose market share and experience an overall reduction in its profits.

Certain Environmental Expenditures and Potential Environmental Liabilities

Environmental Liabilities

We have three remediation projects, which are currently in progress relating to our Perma-Fix of Dayton, Inc. ("PFD"), Perma-Fix of Memphis, Inc. ("PFM"), and Perma-Fix South Georgia, Inc. ("PFSG") subsidiaries, which are all included within our discontinued operations. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. These remediation activities are closely reviewed and monitored by the applicable state regulators.

At December 31, 2021, we had total accrued environmental remediation liabilities of $876,000, an increase of $22,000 from the December 31, 2020 balance of $854,000. The net increase represents an increase of $100,000 made to the reserve at our PFSG subsidiary due to reassessment of the reserve and payments of approximately $78,000 for remediation projects for the three subsidiaries. At December 31, 2021, $349,000 of the total accrued environmental liabilities was recorded as current.

The nature of our business exposes us to significant cost to comply with governmental environmental laws, rules and regulations and risk of liability for damages. Such potential liability could involve, for example, claims for cleanup costs, personal injury or damage to the environment in cases where we are held responsible for the release of hazardous materials; claims of employees, customers or third parties for personal injury or property damage occurring in the course of our operations; and claims alleging negligence or professional errors or omissions in the planning or performance of our services. In addition, we could be deemed a potentially responsible party ("PRP") for the costs of required cleanup of properties, which may be contaminated by hazardous substances generated or transported by us to a site we selected, including properties owned or leased by us. We could also be subject to fines and civil penalties in connection with violations of regulatory requirements.

R&D

Innovation and technical know-how by our operations is very important to the success of our business. Our goal is to discover, develop and bring to market innovative ways to process waste that address unmet environmental needs. We conduct research internally, and also through collaborations with other third parties. The majority of our research activities are performed as we receive new and unique waste to treat. Our competitors also devote resources to R&D and many such competitors have greater resources at their disposal than we do. R&D totaled $746,000 and $762,000 for 2021 and 2020, respectively. See above discussion under "Business – Company Overview and Principal Products and Services" as to the Company's decision to cease all R&D activities under its Medical Segment and the sale of PFM Poland.

Governmental Regulation

Environmental companies, such as us, and their customers are subject to extensive and evolving environmental laws and regulations by a number of federal, state and local environmental, safety and health agencies, the principal of which being the EPA. These laws and regulations largely contribute to the demand for our services. Although our customers remain responsible by law for their environmental problems, we

must also comply with the requirements of those laws applicable to our services. We cannot predict the extent to which our operations may be affected by future enforcement policies as applied to existing laws or by the enactment of new environmental laws and regulations. Moreover, any predictions regarding possible liability are further complicated by the fact that under current environmental laws we could be jointly and severally liable for certain activities of third parties over whom we have little or no control. Although we believe that we are currently in substantial compliance with applicable laws and regulations, we could be subject to fines, penalties or other liabilities or could be adversely affected by existing or subsequently enacted laws or regulations. The principal environmental laws affecting our customers and us are briefly discussed below.

The Resource Conservation and Recovery Act of 1976, as amended ("RCRA")

RCRA and its associated regulations establish a strict and comprehensive permitting and regulatory program applicable to companies, such as us, that treat, store or dispose of hazardous waste. The EPA has promulgated regulations under RCRA for new and existing treatment, storage and disposal facilities including incinerators, storage and treatment tanks, storage containers, storage and treatment surface impoundments, waste piles and landfills. Every facility that treats, stores or disposes of hazardous waste must obtain a RCRA permit or must obtain interim status from the EPA, or a state agency, which has been authorized by the EPA to administer its program, and must comply with certain operating, financial responsibility and closure requirements.

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA," also referred to as the "Superfund Act")

CERCLA governs the cleanup of sites at which hazardous substances are located or at which hazardous substances have been released or are threatened to be released into the environment. CERCLA authorizes the EPA to compel responsible parties to clean up sites and provides for punitive damages for noncompliance. CERCLA imposes joint and several liabilities for the costs of clean up and damages to natural resources.

Health and Safety Regulations

The operation of our environmental activities is subject to the requirements of the OSHA and comparable state laws. Regulations promulgated under OSHA by the Department of Labor require employers of persons in the transportation and environmental industries, including independent contractors, to implement hazard communications, work practices and personnel protection programs in order to protect employees from equipment safety hazards and exposure to hazardous chemicals.

Atomic Energy Act

The Atomic Energy Act of 1954 governs the safe handling and use of Source, Special Nuclear and Byproduct materials in the U.S. and its territories. This act authorized the Atomic Energy Commission (now the Nuclear Regulatory Commission "USNRC") to enter into "Agreements with states to carry out those regulatory functions in those respective states except for Nuclear Power Plants and federal facilities like the VA hospitals and the DOE operations." The State of Florida Department of Health (with the USNRC oversight), Office of Radiation Control, regulates the licensing and radiological program of the PFF facility; the State of Tennessee (with the USNRC oversight), Tennessee Division of Radiological Health, regulates licensing and the radiological program of the DSSI facility and the EWOC facility; and the State of Washington (with the USNRC oversight) Department of Health, regulates licensing and the radiological operations of the PFNWR facility.

Other Laws

Our activities are subject to other federal environmental protection and similar laws, including, without limitation, the Clean Water Act, the Clean Air Act, the Hazardous Materials Transportation Act and the TSCA. Many states have also adopted laws for the protection of the environment which may affect us, including laws governing the generation, handling, transportation and disposition of hazardous substances and laws governing the investigation and cleanup of, and liability for, contaminated sites. Some of these state provisions are broader and more stringent than existing federal law and regulations. Our failure to conform our services to the requirements of any of these other applicable federal or state laws could subject us to substantial liabilities which could have a material adverse effect on us, our operations and financial

condition. In addition to various federal, state and local environmental regulations, our hazardous waste transportation activities are regulated by the U.S. Department of Transportation, the Interstate Commerce Commission and transportation regulatory bodies in the states in which we operate. We cannot predict the extent to which we may be affected by any law or rule that may be enacted or enforced in the future, or any new or different interpretations of existing laws or rules.

ITEM 1A. RISK FACTORS

The following are certain risk factors that could affect our business, financial performance, and results of operations. These risk factors should be considered in connection with evaluating the forward-looking statements contained in this Form 10-K, as the forward-looking statements are based on current expectations, and actual results and conditions could differ materially from the current expectations. Investing in our securities involves a high degree of risk, and before making an investment decision, you should carefully consider these risk factors as well as other information we include or incorporate by reference in the other reports we file with the Securities and Exchange Commission (the "Commission").

Risk Related to COVID-19

COVID-19 could result in material adverse effects on our business, financial position, results of operations and cash flows.
The extent of the impact of the COVID-19 pandemic on our business is uncertain and difficult to predict, as the responses to the pandemic continue to evolve rapidly. Our Treatment Segment's revenue has been negatively impacted by continued waste shipment delays from certain customers since the latter part of the first quarter of 2020 at the start of the pandemic. Within our Services Segment, we experienced delays in procurement actions and contract awards in the first half of 2021 and work under certain new projects won in the second half of 2021 was curtailed/delayed from the impact of COVID-19, among other things. At this time, we expect waste shipment receipts to improve starting in the second quarter of 2022 as certain of our customers reinstates return-to-work schedules and activities under project to start ramping up as the impact of COVID-19 starts to ease up. However, the severity of the impact the COVID-19 pandemic on our business will depend on a number of factors, including, but not limited to, the duration and severity of the pandemic, impact from emergence of potential new variants of the virus, the extent and severity of the impact on our customers, the impact on governmental programs and budgets, and how quickly and to what extent normal economic and operating conditions resume, all of which are uncertain and cannot be predicted with any accuracy or confidence at this time. Our future results of operations and liquidity could be adversely impacted from the continued impact of COVID-19, including continued delays in waste shipments and contract awards, and/or occurrence of project work shut downs by our customers or us.

Risks Relating to our Business and Operations

Failure to maintain our financial assurance coverage that we are required to have in order to operate our permitted treatment, storage and disposal facilities could have a material adverse effect on us.
We maintain finite risk insurance policies and bonding mechanisms which provide financial assurance to the applicable states for our permitted facilities in the event of unforeseen closure of those facilities. We are required to provide and to maintain financial assurance that guarantees to the state that in the event of closure, our permitted facilities will be closed in accordance with the regulations. In the event that we are unable to obtain or maintain our financial assurance coverage for any reason, this could materially impact our operations and our permits which we are required to have in order to operate our treatment, storage, and disposal facilities.

Further supply chain constraints may negatively impact our operations and our financial results.
We use various commercially available materials and supplies which include among other things chemicals, containers/drums and personal protection equipment ("PPE") in our operations. We generally source these items from various suppliers in order to take advantage of competitive pricing.

We also utilize various types of equipment, which include among other things trucks, flatbeds, lab equipment, heavy machineries, in carrying out our business operations. Our equipment may be obtained

through direct purchase, rental option or leases. Within our Services Segment, equipment required for projects are often provided by our subcontractors as part of our contract agreement with the subcontractor. Due to some of our specialized waste treatment processes, certain equipment that we utilize are designed and built to our specifications. We rely on various commercial equipment suppliers for the construction of these equipment. Due to recent supply chain constraints, we experienced a delay in the delivery of a new waste processing unit to us by our supplier due to shortage of parts required for the construction of the unit, among other things. Delivery of this unit was expected during the third quarter of 2021 but did not occur until the first quarter of 2022. The supply chain interruption delayed deployment of our new technology which negatively impacted our revenue for 2021 as associated revenue was not able to be generated. Continued increases in pricing and/or potential delays in procurements of material and supplies and equipment required for our operations resulting from further tightening supply chain could further adversely affect our operations and profitability.

If we cannot maintain adequate insurance coverage, we will be unable to continue certain operations.
Our business exposes us to various risks, including claims for causing damage to property and injuries to persons that may involve allegations of negligence or professional errors or omissions in the performance of our services. Such claims could be substantial. We believe that our insurance coverage is presently adequate and similar to, or greater than, the coverage maintained by other companies in the industry of our size. If we are unable to obtain adequate or required insurance coverage in the future, or if our insurance is not available at affordable rates, we would violate our permit conditions and other requirements of the environmental laws, rules, and regulations under which we operate. Such violations would render us unable to continue certain of our operations. These events would have a material adverse effect on our financial condition.

The inability to maintain existing government contracts or win new government contracts over an extended period could have a material adverse effect on our operations and adversely affect our future revenues.
A material amount of our Treatment and Services Segments' revenues are generated through various government contracts or subcontracts (domestic and foreign (primarily Canadian)). Our revenues from governmental contracts and subcontracts relating to governmental facilities within our segments were approximately $60,812,000, or 84.2%, and $96,582,000, or 91.6%, of our consolidated revenues for 2021 and 2020, respectively. Project work under contracts/task order agreements with Canadian government authorities has substantially been completed. Most of our government contracts or our subcontracts granted under government contracts are awarded through a regulated competitive bidding process. Some government contracts are awarded to multiple competitors, which increase overall competition and pricing pressure and may require us to make sustained post-award efforts to realize revenues under these government contracts. Contracts with, or subcontracts involving, the U.S federal government are generally terminable for convenience at any time at the option of the governmental agency. The contracts/TOAs that we are a party to with Canadian governmental authorities also generally provide that the government authorities may terminate the contracts/TOAs at any time for any reason for convenience. If we fail to maintain or replace these relationships, or if a material contract is terminated or renegotiated in a manner that is materially adverse to us, our revenues and future operations could be materially adversely affected.

Our existing and future customers may reduce or halt their spending on hazardous waste and nuclear services with outside vendors, including us.
A variety of factors may cause our existing or future customers (including government clients) to reduce or halt their spending on hazardous waste and nuclear services from outside vendors, including us. These factors include, but are not limited to:

- accidents, terrorism, natural disasters or other incidents occurring at nuclear facilities or involving shipments of nuclear materials;
- failure of government to approve necessary budgets, or to reduce the amount of the budget necessary, to fund remediation sites, including DOE and DOD sites;
- civic opposition to or changes in government policies regarding nuclear operations;
- a reduction in demand for nuclear generating capacity; or

- failure to perform under existing contracts, directly or indirectly, with the government.

These events could result in or cause government clients to terminate or cancel existing contracts involving us to treat, store or dispose of contaminated waste and/or to perform remediation projects, at one or more of government sites. These events also could adversely affect us to the extent that they result in the reduction or elimination of contractual requirements, lower demand for nuclear services, burdensome regulation, disruptions of shipments or production, increased operational costs or difficulties or increased liability for actual or threatened property damage or personal injury.

Economic downturns, reductions in government funding or other events beyond our control (such as the continued impact of COVID-19) could have a material negative impact on our businesses.
Demand for our services has been, and we expect that demand will continue to be, subject to significant fluctuations due to a variety of factors beyond our control, including, without limitation, economic conditions, reductions in the budget for spending to remediate federal sites due to numerous reasons including, without limitation, the substantial deficits that the federal government has and is continuing to incur, and/or the continued impact resulting from COVID-19. During economic downturns, large budget deficits that the federal government and many states are experiencing, and other events beyond our control, including, but not limited to the impact from COVID-19, the ability of private and government entities to spend on waste services, including nuclear services, may decline significantly. Our operations depend, in large part, upon governmental funding (for example, the annual budget of the DOE) 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 flow.

The loss of one or a few customers could have an adverse effect on us.
One or a few governmental customers or governmental related customers have in the past, and may in the future, account for a significant portion of our revenue in any one year or over a period of several consecutive years. Because customers generally contract with us for specific projects, we may lose these significant customers from year to year as their projects with us are completed. Our inability to replace the business with other similar significant projects could have an adverse effect on our business and results of operations.

We are a holding company and depend, in large part, on receiving funds from our subsidiaries to fund our indebtedness.
Because we are a holding company and operations are conducted through our subsidiaries, our ability to meet our obligations depends, in large part, on the operating performance and cash flows of our subsidiaries.

Our Treatment Segment has limited end disposal sites to utilize to dispose of its waste which could significantly impact our results of operations.
Our Treatment Segment has limited options available for disposal of our nuclear waste. Currently, there are only four commercial disposal sites for our low-level radioactive waste and four commercial disposal sites for our very low-level activity waste we receive from non-governmental sites, allowing us to take advantage of the pricing competition between these sites. If one or more of these commercial disposal sites ceases to accept waste or closes for any reason or refuses to accept the waste of our Treatment Segment, for any reason, we would have limited remaining site to dispose of our nuclear waste. With limited end disposal site to dispose of our waste, we could be subject to significantly increased costs which could negatively impact our results of operations.

Our operations are subject to seasonal factors, which cause our revenues to fluctuate.
We have historically experienced reduced revenues and losses during the first and fourth quarters of our fiscal years due to a seasonal slowdown in operations from poor weather conditions, overall reduced activities during these periods resulting from holiday periods, and finalization of government budgets during the fourth quarter of each year. During our second and third fiscal quarters there has historically been an increase in revenues and operating profits. If we do not continue to have increased revenues and profitability during the second and third fiscal quarters, this could have a material adverse effect on our results of operations and liquidity.

We are engaged in highly competitive businesses and typically must bid against other competitors to obtain major contracts.
We are engaged in highly competitive business in which most of our government contracts and some of our commercial contracts are awarded through competitive bidding processes. We compete with national, regional firms and some international firms with nuclear and/or hazardous waste services practices, as well as small or local contractors. Some of our competitors have greater financial and other resources than we do, which can give them a competitive advantage. In addition, even if we are qualified to work on a new government contract, we might not be awarded the contract because of existing government policies designed to protect certain types of businesses and under-represented minority contractors. Although we believe we have the ability to certify and bid government contract as a small business, there are a number of qualified small businesses in our market that will provide intense competition. For international business, which we continue to focus on, there are additional competitors, many from within the country the work is to be performed, making winning work in foreign countries more challenging. Competition places downward pressure on our contract prices and profit margins. If we are unable to meet these competitive challenges, we could lose market share and experience on overall reduction in our profits.

We bear the risk of cost overruns in fixed-price contracts. We may experience reduced profits or, in some cases, losses under these contracts if costs increase above our estimates.
Our revenues may be earned under contracts that are fixed-price or maximum price in nature. Fixed-price contracts expose us to a number of risks not inherent in cost-reimbursable contracts. Under fixed price and guaranteed maximum-price contracts, contract prices are established in part on cost and scheduling estimates which are based on a number of assumptions, including assumptions about future economic conditions, prices and availability of labor, equipment and materials, and other exigencies. If these estimates prove inaccurate, or if circumstances change such as unanticipated technical problems, difficulties in obtaining permits or approvals, changes in laws or labor conditions, continued supply chain interruptions, weather delays, cost of raw materials, our suppliers' or subcontractors' inability to perform, and/or other events beyond our control, such as the impact of COVID-19, cost overruns may occur and we could experience reduced profits or, in some cases, a loss for that project. Errors or ambiguities as to contract specifications can also lead to cost-overruns.

Adequate bonding is necessary for us to win certain types of new work and support facility closure requirements.
We are often required to provide performance bonds to customers under certain of our contracts, primarily within our Services Segment. These surety instruments indemnify the customer if we fail to perform our obligations under the contract. If a bond is required for a particular project and we are unable to obtain it due to insufficient liquidity or other reasons, we may not be able to pursue that project. In addition, we provide bonds to support financial assurance in the event of facility closure pursuant to state requirements. We currently have a bonding facility but, the issuance of bonds under that facility is at the surety's sole discretion. Moreover, due to events that affect the insurance and bonding markets generally, bonding may be more difficult to obtain in the future or may only be available at significant additional cost. There can be no assurance that bonds will continue to be available to us on reasonable terms. Our inability to obtain adequate bonding and, as a result, to bid on new work could have a material adverse effect on our business, financial condition and results of operations.

If we cannot maintain our governmental permits or cannot obtain required permits, we may not be able to continue or expand our operations.
We are a nuclear services and waste management company. Our business is subject to extensive, evolving, and increasingly stringent federal, state, and local environmental laws and regulations. Such federal, state, and local environmental laws and regulations govern our activities regarding the treatment, storage, recycling, disposal, and transportation of hazardous and non-hazardous waste and low-level radioactive waste. We must obtain and maintain permits or licenses to conduct these activities in compliance with such laws and regulations. Failure to obtain and maintain the required permits or licenses would have a material adverse effect on our operations and financial condition. If any of our facilities are unable to maintain currently held permits or licenses or obtain any additional permits or licenses which may be required to conduct its operations, we may not be able to continue those operations at these facilities, which could have a material adverse effect on us.

Risks Related to Laws and Regulations

As a government contractor, we are subject to extensive government regulation, and our failure to comply with applicable regulations could subject us to penalties that may restrict our ability to conduct our business.
Our governmental contracts or subcontracts relating to DOE sites, are a significant part of our business. Allowable costs under U.S. government contracts are subject to audit by the U.S. government. If these audits result in determinations that costs claimed as reimbursable are not allowed costs or were not allocated in accordance with applicable regulations, we could be required to reimburse the U.S. government for amounts previously received.

Governmental contracts or subcontracts involving governmental facilities are often subject to specific procurement regulations, contract provisions and a variety of other requirements relating to the formation, administration, performance and accounting of these contracts. Many of these contracts include express or implied certifications of compliance with applicable regulations and contractual provisions. If we fail to comply with any regulations, requirements or statutes, our existing governmental contracts or subcontracts involving governmental facilities could be terminated or we could be suspended from government contracting or subcontracting. If one or more of our governmental contracts or subcontracts are terminated for any reason, or if we are suspended or debarred from government work, we could suffer a significant reduction in expected revenues and profits. Furthermore, as a result of our governmental contracts or subcontracts involving governmental facilities, claims for civil or criminal fraud may be brought by the government or violations of these regulations, requirements or statutes.

Changes in environmental regulations and enforcement policies could subject us to additional liability and adversely affect our ability to continue certain operations.
We cannot predict the extent to which our operations may be affected by future governmental enforcement policies as applied to existing environmental laws, by changes to current environmental laws and regulations, or by the enactment of new environmental laws and regulations. Any predictions regarding possible liability under such laws are complicated further by current environmental laws which provide that we could be liable, jointly and severally, for certain activities of third parties over whom we have limited or no control.

Our businesses subject us to substantial potential environmental liability.
Our business of rendering services in connection with management of waste, including certain types of hazardous waste, low-level radioactive waste, and mixed waste (waste containing both hazardous and low-level radioactive waste), subjects us to risks of liability for damages. Such liability could involve, without limitation:

- claims for clean-up costs, personal injury or damage to the environment in cases in which we are held responsible for the release of hazardous or radioactive materials;
- claims of employees, customers, or third parties for personal injury or property damage occurring in the course of our operations; and
- claims alleging negligence or professional errors or omissions in the planning or performance of our services.

Our operations are subject to numerous environmental laws and regulations. We have in the past, and could in the future, be subject to substantial fines, penalties, and sanctions for violations of environmental laws and substantial expenditures as a responsible party for the cost of remediating any property which may be contaminated by hazardous substances generated by us and disposed at such property, or transported by us to a site selected by us, including properties we own or lease.

As our operations expand, we may be subject to increased litigation, which could have a negative impact on our future financial results.
Our operations are highly regulated and we are subject to numerous laws and regulations regarding procedures for waste treatment, storage, recycling, transportation, and disposal activities, all of which may

provide the basis for litigation against us. In recent years, the waste treatment industry has experienced a significant increase in so-called "toxic-tort" litigation as those injured by contamination seek to recover for personal injuries or property damage. We believe that, as our operations and activities expand, there will be a similar increase in the potential for litigation alleging that we have violated environmental laws or regulations or are responsible for contamination or pollution caused by our normal operations, negligence or other misconduct, or for accidents, which occur in the course of our business activities. Such litigation, if significant and not adequately insured against, could adversely affect our financial condition and our ability to fund our operations. Protracted litigation would likely cause us to spend significant amounts of our time, effort, and money. This could prevent our management from focusing on our operations and expansion.

If environmental regulation or enforcement is relaxed, the demand for our services could decrease.
The demand for our services is substantially dependent upon the public's concern with, and the continuation and proliferation of, the laws and regulations governing the treatment, storage, recycling, and disposal of hazardous, non-hazardous, and low-level radioactive waste. A decrease in the level of public concern, the repeal or modification of these laws, or any significant relaxation of regulations relating to the treatment, storage, recycling, and disposal of hazardous waste and low-level radioactive waste could significantly reduce the demand for our services and could have a material adverse effect on our operations and financial condition. We are not aware of any current federal or state government or agency efforts in which a moratorium or limitation has been, or will be, placed upon the creation of new hazardous or radioactive waste regulations that would have a material adverse effect on us; however, no assurance can be made that such a moratorium or limitation will not be implemented in the future.

We and our customers operate in a politically sensitive environment, and the public perception of nuclear power and radioactive materials can affect our customers and us.
We and our customers operate in a politically sensitive environment. Opposition by third parties to particular projects can limit the handling and disposal of radioactive materials. Adverse public reaction to developments in the disposal of radioactive materials, including any high-profile incident involving the discharge of radioactive materials, could directly affect our customers and indirectly affect our business. Adverse public reaction also could lead to increased regulation or outright prohibition, limitations on the activities of our customers, more onerous operating requirements or other conditions that could have a material adverse impact on our customers' and our business.

The elimination or any modification of the Price-Anderson Acts indemnification authority could have adverse consequences for our business.
The Atomic Energy Act of 1954, as amended, or the AEA, comprehensively regulates the manufacture, use, and storage of radioactive materials. The Price-Anderson Act ("PAA") supports the nuclear services industry by offering broad indemnification to DOE contractors for liabilities arising out of nuclear incidents at DOE nuclear facilities. That indemnification protects DOE prime contractor, but also similar companies that work under contract or subcontract for a DOE prime contract or transporting radioactive material to or from a site. The indemnification authority of the DOE under the PAA was extended through 2025 by the Energy Policy Act of 2005.

Under certain conditions, the PAA's indemnification provisions may not apply to our processing of radioactive waste at governmental facilities, and may not apply to liabilities that we might incur while performing services as a contractor for the DOE and the nuclear energy industry. If an incident or evacuation is not covered under PAA indemnification, we could be held liable for damages, regardless of fault, which could have an adverse effect on our results of operations and financial condition. If such indemnification authority is not applicable in the future, our business could be adversely affected if the owners and operators of new facilities fail to retain our services in the absence of commercial adequate insurance and indemnification.

Risks Relating to our Financial Performance and Position and Need for Financing

If any of our permits, other intangible assets, and tangible assets becomes impaired, we may be required to record significant charges to earnings.

Under accounting principles generally accepted in the United States ("U.S. GAAP"), we review our intangible and tangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Our permits are tested for impairment at least annually. Factors that may be considered a change in circumstances, indicating that the carrying value of our permit, other intangible assets, and tangible assets may not be recoverable, include a decline in stock price and market capitalization, reduced future cash flow estimates, and slower growth rates in our industry. We may be required, in the future, to record impairment charges in our financial statements, in which any impairment of our permit, other intangible assets, and tangible assets is determined. Such impairment charges could negatively impact our results of operations.

Breach of any of the covenants in our credit facility could result in a default, triggering repayment of outstanding debt under the credit facility and the termination of our credit facility.
Our credit facility with our bank contains financial covenants. A breach of any of these covenants could result in a default under our credit facility triggering our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. We failed to meet our quarterly fixed charge coverage ratio ("FCCR") requirement for the second and fourth quarters of 2021; however, our lender waived these instances of non-compliance. We were not required to perform testing of our FCCR in the third quarter of 2021. As a result of a recent amendment to our credit facility, our lender has removed the FCCR testing requirement for the first quarter of 2022 and revised the methodology to be used in calculating the FCCR for the second to the fourth quarters of 2022. Additionally, in the past, when we also failed to meet our minimum FCCR requirement, our lender has either waived these instances of non-compliance or provided certain amendments to our FCCR requirements which enabled us to meet our quarterly FCCR requirements. Additionally, our lender has in the past approved that testing of the FCCR is not required in certain quarters. If we fail to meet any of our financial covenants going forward, including the minimum quarterly FCCR requirement, and our lender does not further waive the non-compliance or further revise our covenant requirement so that we are in compliance, our lender could accelerate the payment of our borrowings under our credit facility and terminate our credit facility. In such event, we may not have sufficient liquidity to repay our debt under our credit facility and other indebtedness and/or operate our business.

Our debt and borrowing availability under our credit facility could adversely affect our operations.
At December 31, 2021, our aggregate consolidated debt was approximately $993,000. Our Second Amended and Restated Revolving Credit, Term Loan and Security Agreement dated May 8, 2020 provides for a total credit facility commitment of approximately $19,742,000, consisting of a $18,000,000 revolving line of credit and a term loan balance of approximately $1,742,000. The maximum we can borrow under the revolving part of the credit facility is based on a percentage of the amount of our eligible receivables outstanding at any one time reduced by outstanding standby letters of credit and any borrowing reduction that our lender has or may impose from time to time. At December 31, 2021, we had no borrowing under the revolving part of our credit facility and borrowing availability of up to an additional $8,692,000. As a result of a recent amendment to our credit facility, we are required to maintain a minimum of $3,000,000 in borrowing availability under the revolving credit until the minimum FCCR requirement for the quarter ended June 30, 2022 has been met and certified to our lender. A lack of positive operating results could have material adverse consequences on our ability to operate our business. Our ability to make principal and interest payments, to refinance indebtedness, and borrow under our credit facility will depend on both our and our subsidiaries' future operating performance and cash flow. Prevailing economic conditions, interest rate levels, and financial, competitive, business, and other factors affect us. Many of these factors are beyond our control, including the impact of COVID-19.

Our indebtedness could limit our financial and operating activities, and adversely affect our ability to incur additional debt to fund future needs.
As a result of our indebtedness, we could, among other things, be:

- required to dedicate a substantial portion of our cash flow to the payment of principal and interest, thereby reducing the funds available for operations and future business opportunities;
- make it more difficult for us to satisfy our obligations;
- limit our ability to borrow additional money if needed for other purposes, including working

capital, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes, on satisfactory terms or at all;

- limit our ability to adjust to changing economic, business and competitive conditions;
- place us at a competitive disadvantage with competitors who may have less indebtedness or greater access to financing;
- make us more vulnerable to an increase in interest rates, a downturn in our operating performance or a decline in general economic conditions; and
- make us more susceptible to changes in credit ratings, which could impact our ability to obtain financing in the future and increase the cost of such financing.

Any of the foregoing could adversely impact our operating results, financial condition, and liquidity. Our ability to continue our operations depends on our ability to generate profitable operations or complete equity or debt financings to increase our capital.

We may be unable to utilize loss carryforwards in the future.
We have approximately $19,920,000 and $72,767,000 in net operating loss carryforwards for federal and state income tax purposes, respectively and expires in various amounts starting in 2021 if not used against future federal and state income tax liabilities, respectively. Approximately $19,725,000 of our federal net operating loss carryforwards were generated after December 31, 2017 and thus do not expire. Our net loss carryforwards are subject to various limitations. Our ability to use the net loss carryforwards depends on whether we are able to generate sufficient income in the future years. Further, our net loss carryforwards have not been audited or approved by the Internal Revenue Service.

Risks Relating to our Common Stock

Issuance of substantial amounts of our Common Stock could depress our stock price or dilute the percentage ownership of our Common Stockholders.
Any sales of substantial amounts of our Common Stock in the public market could cause an adverse effect on the market price of our Common Stock and could impair our ability to raise capital through the sale of additional equity securities. The issuance of our Common Stock will result in the dilution in the percentage membership interest of our stockholders and the dilution in ownership value. At December 31, 2021, we had 13,214,910 shares of Common Stock outstanding. In addition, at December 31, 2021, we had outstanding options to purchase 1,019,400 shares of our Common Stock at exercise prices ranging from $2.79 to $7.50 per share and an outstanding warrant to purchase 60,000 shares of our Common Stock at exercise price of $3.51 per share. Future sales of the shares issuable could also depress the market price of our Common Stock.

We do not intend to pay dividends on our Common Stock in the foreseeable future.
Since our inception, we have not paid cash dividends on our Common Stock, and we do not anticipate paying any cash dividends in the foreseeable future. Our credit facility prohibits us from paying cash dividends on our Common Stock without prior approval from our lender.

The price of our Common Stock may fluctuate significantly, which may make it difficult for our stockholders to resell our Common Stock when a stockholder wants or at prices a stockholder finds attractive.
The price of our Common Stock on the NASDAQ Capital Markets constantly changes. We expect that the market price of our Common Stock will continue to fluctuate. This may make it difficult for our stockholders to resell the Common Stock when a stockholder wants or at prices a stockholder finds attractive.

General Risk Factors

Loss of certain key personnel could have a material adverse effect on us.
Our success depends on the contributions of our key management, environmental and engineering personnel. Our future success depends on our ability to retain and expand our staff of qualified personnel, including environmental specialists and technicians, sales personnel, and engineers. Without qualified

personnel, we may incur delays in rendering our services or be unable to render certain services. We cannot be certain that we will be successful in our efforts to attract and retain qualified personnel as their availability is limited (especially in the current labor market environment) due to the demand for hazardous waste management services and the highly competitive nature of the hazardous waste management industry. We do not maintain key person insurance on any of our employees, officers, or directors.

We may not be successful in winning new business mandates from our government and commercial customers or international customers.
We must be successful in winning mandates from our government, commercial customers and international customers to replace revenues from projects that we have completed or that are nearing completion and to increase our revenues. Our business and operating results can be adversely affected by the size and timing of a single material contract.

Our failure to maintain our safety record could have an adverse effect on our business.
Our safety record is critical to our reputation. In addition, many of our government and commercial customers require that we maintain certain specified safety record guidelines to be eligible to bid for contracts with these customers. Furthermore, contract terms may provide for automatic termination in the event that our safety record fails to adhere to agreed-upon guidelines during performance of the contract. As a result, our failure to maintain our safety record could have a material adverse effect on our business, financial condition and results of operations.

Systems failures, interruptions or breaches of security and other cyber security risks could have an adverse effect on our financial condition and results of operations.
We are subject to certain operational risks to our information systems. Because of efforts on the part of computer hackers and cyberterrorists to breach data security of companies, we face risk associated with potential failures to adequately protect critical corporate, customer and employee data. As part of our business, we develop and retain confidential data about us and our customers, including the U.S. government. We also rely on the services of a variety of vendors to meet our data processing and communications needs.

Despite our implemented security measures and established policies, we cannot be certain that all of our systems are entirely free from vulnerability to attack or other technological difficulties or failures or failures on the part of our employees to follow our established security measures and policies. Information security risks have increased significantly. Our technologies, systems, and networks may become the target of cyber-attacks, computer viruses, malicious code, or information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of our or our customers' confidential, proprietary and other information and the disruption of our business operations. A security breach could adversely impact our customer relationships, reputation and operation and result in violations of applicable privacy and other laws, financial loss to us or to our customers or to our employees, and litigation exposure. While we maintain a system of internal controls and procedures, any breach, attack, or failure as discussed above could have a material adverse impact on our business, financial condition, and results of operations or liquidity.

There is also an increasing attention on the importance of cybersecurity relating to infrastructure. This creates the potential for future developments in regulations relating to cybersecurity that may adversely impact us, our customers and how we offer our services to our customers.

We may be exposed to certain regulatory and financial risks related to climate change.
Climate change is receiving ever increasing attention from scientists, legislators and the public. The debate is ongoing as to the extent to which our climate is changing, the potential causes of this change and its potential impacts. Some attribute global warming to increased levels of greenhouse gases, including carbon dioxide, which has led to significant legislative and regulatory efforts to limit greenhouse gas emissions. Presently there are no federally mandated greenhouse gas reduction requirements in the United States. However, there are a number of legislative and regulatory proposals to address greenhouse gas emissions, which are in various phases of discussion or implementation. The outcome of federal and state actions to address global climate change could result in a variety of regulatory programs including potential new

regulations. Any adoption by federal or state governments mandating a substantial reduction in greenhouse gas emissions could increase costs associated with our operations. Until the timing, scope and extent of any future regulation becomes known, we cannot predict the effect on our financial position, operating results and cash flows.

We believe our proprietary technology is important to us.
We believe that it is important that we maintain our proprietary technologies. There can be no assurance that the steps taken by us to protect our proprietary technologies will be adequate to prevent misappropriation of these technologies by third parties. Misappropriation of our proprietary technology could have an adverse effect on our operations and financial condition. Changes to current environmental laws and regulations also could limit the use of our proprietary technology.

Failure to maintain effective internal control over financial reporting or failure to remediate a material weakness in internal control over financial reporting could have a material adverse effect on our business, operating results, and stock price.
Maintaining effective internal control over financial reporting is necessary for us to produce reliable financial reports and is important in helping to prevent financial fraud. If we are unable to maintain adequate internal controls, our business and operating results could be harmed. We are required to satisfy the requirements of Section 404 of Sarbanes Oxley and the related rules of the Commission, which require, among other things, management to assess annually the effectiveness of our internal control over financial reporting. As a result of this assessment for the year ending December 31, 2021, management concluded that a material weakness existed in internal control over financial reporting related to the application of ASC 606, "Revenue from Contracts with Customers," specifically to contracts that contain nonstandard terms and conditions (see "Item 9A – Controls and Procedures" for a discussion of this material weakness and our remediation plan). If we fail to remediate this material weakness, there is a reasonable possibility that a misstatement of our annual or interim financial statements will not be prevented or detected in a timely manner. If we cannot produce reliable financial reports, investors could lose confidence in our reported financial information, the market price of our common stock could decline significantly, and our business, financial condition, and reputation could be harmed.

Delaware law, certain of our charter provisions, our stock option plans, outstanding warrants and our Preferred Stock may inhibit a change of control under circumstances that could give you an opportunity to realize a premium over prevailing market prices.
We are a Delaware corporation governed, in part, by the provisions of Section 203 of the General Corporation Law of Delaware, an anti-takeover law. In general, Section 203 prohibits a Delaware public corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. As a result of Section 203, potential acquirers may be discouraged from attempting to effect acquisition transactions with us, thereby possibly depriving our security holders of certain opportunities to sell, or otherwise dispose of, such securities at above-market prices pursuant to such transactions. Further, certain of our option plans provide for the immediate acceleration of, and removal of restrictions from, options and other awards under such plans upon a "change of control" (as defined in the respective plans). Such provisions may also have the result of discouraging acquisition of us.

We have authorized and unissued 15,698,048 (which include shares issuable under outstanding options to purchase 1,019,400 shares of our Common Stock and shares issuable under an outstanding warrant to purchase 60,000 shares of our Common Stock) shares of our Common Stock and 2,000,000 shares of our Preferred Stock as of December 31, 2021. These unissued shares could be used by our management to make it more difficult for, and thereby discourage, an attempt to acquire control of us.

Third party expectations relating to Environment, Social and Governance ("ESG") factors may impose additional costs and expose us and our clients to new risks.
We have renewed our commitment and focus on sustainability and ESG efforts. There is an increasing focus from certain investors and certain of our customers, and other stakeholders concerning corporate responsibility, specifically related to ESG factors. Some investors may use these factors to guide their

investment strategies and, in some cases, may choose not to invest in us, or otherwise do business with us, if they believe our policies relating to corporate responsibility are inadequate or do not align with theirs. Third party providers of corporate responsibility ratings and reports on companies have increased in number, resulting in varied standards. In addition, the criteria by which companies' corporate responsibility practices are assessed are evolving, which could result in greater expectations of us and cause us to undertake costly initiatives to satisfy such new criteria. Alternatively, if we elect not to or are unable to satisfy such new criteria or do not meet the criteria of a specific third party provider, some investors may conclude that our policies with respect to corporate responsibility are inadequate. We may face reputational damage in the event that our corporate responsibility procedures or standards do not meet the standards set by various constituencies. If we fail to satisfy the expectations of investors, our customers and other stakeholders or our initiatives are not executed as planned, our reputation and financial results could be adversely affected and our revenues, results of operations and ability to grow our business may be negatively impacted. Additionally, new legislative or regulatory initiatives related to ESG could adversely affect our business.

Our profitability is vulnerable to inflation and cost increases.
Increases in any of our operating costs, including changes in fuel prices (which impacts our transportation cost), wage rates, supplies, and utility costs, may increase our overall cost of goods sold or operating expenses. These cost increases may be the result of inflationary pressures that could further reduce profitability. Competitive pressures in our industry may have the effect of inhibiting our ability to reflect these increased costs in the prices of our services provided to our customers and therefore reduce our profitability.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not Applicable.

ITEM 2. PROPERTIES

Our principal executive office is in Atlanta, Georgia. Our Business Center is located in Oak Ridge, Tennessee. Our Treatment Segment facilities are located in Gainesville, Florida; Kingston, Tennessee; Richland, Washington; and Oak Ridge, Tennessee. All of the properties where these facilities operate on are pledged to our senior lender as collateral for our credit facility with the exception of the property at Oak Ridge, Tennessee which is leased. Our Services Segment maintains offices, which are all leased properties. We maintain properties in Valdosta, Georgia and Memphis, Tennessee, which are all non-operational and are included within our discontinued operations.

The Company currently leases properties in the following locations for operations and administrative functions within our Treatment and Services Segments, including our corporate office and Business Center:

Location	Square Footage (SF)/ Acreage (AC)	Expiration of Lease
Oak Ridge, TN (Business Center)	16,319 SF	April 30, 2026
Oak Ridge, TN (Services)	5,000 SF	September 30, 2022
Blaydon On Tyne, England (Services)	1,000 SF	Monthly
New Brighton, PA (Services)	3,558 SF	June 30, 2022
Newport, KY (Services)	1,566 SF	Monthly
Pembroke, Ontario, Canada (Services)	800 SF	Monthly
Atlanta, GA (Corporate)	6,499 SF	July 31, 2024
Oak Ridge, TN (Treatment)	8.7 AC, including 17,400 SF	September 30, 2023

We believe that the above facilities currently provide adequate capacity for our operations and that additional facilities are readily available in the regions in which we operate, which could support and supplement our existing facilities.

ITEM 3. LEGAL PROCEEDINGS

See "Part II – Item 8 - Financial Statements and Supplementary Data – Notes to Consolidated

Financial Statements – Note 15 – Commitments and Contingencies – Legal Matters" for a discussion of our legal proceedings.

ITEM 4. MINE SAFETY DISCLOSURE

Not Applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Our Common Stock is traded on the NASDAQ Capital Markets ("NASDAQ") under the symbol "PESI." The following table sets forth the high and low market trade prices quoted for the Common Stock during the periods shown. The source of such quotations and information is the NASDAQ online trading history reports.

		2021		2020	
		Low	High	Low	High
Common Stock	1st Quarter	$ 5.74	$ 7.99	$ 3.82	$ 9.50
	2nd Quarter	6.70	7.95	4.76	6.54
	3rd Quarter	5.53	7.56	5.94	7.40
	4th Quarter	6.00	7.30	5.80	7.13

At February 14, 2022, there were approximately 134 stockholders of record of our Common Stock. The actual number of our stockholders is greater than this number, and includes beneficial owners whose shares are held in "street name" by banks, brokers, and other nominees.

Since our inception, we have not paid any cash dividends on our Common Stock and have no dividend policy. Our loan agreement dated May 8, 2020 prohibits us from paying any cash dividends on our Common Stock without prior approval from our lender. We do not anticipate paying cash dividends on our outstanding Common Stock in the foreseeable future.

There were no purchases made by us or on behalf of us or any of our affiliated members of shares of our Common Stock during 2021.

See "Note 6 - Capital Stock, Stock Plans, Warrants, and Stock Based Compensation" in Part II, Item 8, "Financial Statements and Supplementary Data" and "Equity Compensation Plans" in Part III, Item 12, "Security Ownership of Certain Beneficial Owners and Management and Related Stockholders Matter" for securities authorized for issuance under equity compensation plans which are incorporated herein by reference.

ITEM 6. SELECTED FINANCIAL DATA

Not required under Regulation S-K for smaller reporting companies.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Certain statements contained within this "Management's Discussion and Analysis of Financial Condition and Results of Operations" ("MD&A") may be deemed "forward-looking statements" within the meaning of Section 27A of the Act, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the "Private Securities Litigation Reform Act of 1995"). See "Special Note regarding Forward-Looking Statements" contained in this report.

Management's discussion and analysis is based, among other things, upon our audited consolidated financial statements and includes our accounts, the accounts of our wholly-owned subsidiaries, the accounts of our

majority-owned Polish subsidiary (which was sold in December 2021 – see a discussion below "PF Medical" for a discussion of this sale), and the account of a variable interest entity for which we are the primary beneficiary, after elimination of all significant intercompany balances and transactions.

The following discussion and analysis should be read in conjunction with our consolidated financial statements and the notes thereto included in Item 8 of this report.

COVID-19 Impact

Our 2021 financial results continued to be impacted by COVID-19 with the emergence of new COVID variants. Our Treatment Segment's revenue has been negatively impacted by continued waste shipment delays from certain customers since the latter part of the first quarter of 2020 at the start of the pandemic. However, we expect to see a gradual return in waste receipts from these customers starting in the second quarter of 2022 as we expect our customers to start easing up on COVID-19 restrictions, including reinstating return-to-work schedules in the upcoming months. Additionally, as a result of the constraint in supply chain, we experienced a delay in the delivery of a new technology waste processing unit from our supplier which negatively impacted our revenue as associated revenue was not able to be generated. Delivery of this unit had been expected during the third quarter of 2021 but did not occur until the first quarter of 2022. Within our Services Segment, we experienced delays in procurement actions and contract awards resulting primarily from the impact of COVID-19. However, since the end of the second quarter of 2021, we were awarded a number of new contracts, including a fixed price contract awarded to us at the end of the third quarter of 2021 with a value of approximately $40,000,000 for the decommissioning of a navy ship, with work expected to be completed over an eighteen to twenty-four month period. Due to customer administrative delay and/or continued COVID-19 impact experienced by certain customers, work under certain of our new awards was temporarily curtailed/delayed which negatively impacted our revenue. We expect to see a ramp-up in activities from certain of these new projects starting in the second quarter of 2022. Within our Treatment and Services Segments, we continue to have bids currently submitted and awaiting awards.

Our management team continues to proactively update our ongoing business operations and safety plans in an effort to mitigate any potential impact of COVID-19. We continue to monitor government mandates and recommendations and remain focused on protecting the health and well-being of our employees and the communities in which we operate while assuring the continuity of our business operations.

At this time, we believe we have sufficient liquidity on hand to continue business operations during the next twelve months. At December 31, 2021, we had borrowing availability under our revolving credit facility of approximately $8,692,000 which was based on a percentage of eligible receivables and subject to certain reserves and included our cash on hand of approximately $4,440,000. As a result of a recent amendment to our Loan Agreement, we are required to maintain a minimum of $3,000,000 in borrowing availability under our revolving credit until the minimum FCCR requirement for the quarter ended June 30, 2022 has been met and certified to our lender (see "Financing Activities" within this MD&A for a discussion of this amendment). We continue to assess the need in reducing operating costs during this volatile time, which may include curtailing certain capital expenditures and eliminating non-essential expenditures.

We are closely monitoring our customers' payment performance. However, since a significant portion of our revenues is derived from government related contracts, we do not expect our accounts receivable collections to be materially impacted due to COVID-19.

As the situations surrounding COVID-19 continues to remain fluid, the full impact and extent of the pandemic on our financial results and liquidity cannot be estimated with any degree of certainty. We continue to closely monitor the impact of the COVID-19 pandemic on all aspects of our business.

Review

Our overall revenue decreased $33,235,000 or 31.5% to $72,191,000 for the twelve months ended December 31, 2021 from $105,426,000 for the corresponding period of 2020. The revenue decrease was entirely within our Services Segment where revenue decreased by approximately $36,084,000 or 47.9% to $39,199,000 for the twelve months ended December 31, 2021 from $75,283,000 for the corresponding

period of 2020 primarily due to delays in contract awards resulting primarily from the impact of COVID-19 as discussed above which was further exacerbated by the completion of a certain large project in the Services Segment in the second quarter of 2021 and the near completion of another certain large project in 2021. As discussed above, although we were awarded a number of new contracts within the Services Segment since the end of the second quarter of 2021, work under certain of these new awards was temporarily curtailed/delayed due to customer administrative delay and/or COVID-19 impact experienced by the customer. However, we expect to see a ramp-up in activities from certain of these new projects starting in the second quarter of 2022. Treatment Segment revenue increased by $2,849,000 or 9.5% to $32,992,000 for the twelve months ended December 31, 2021 from $30,143,000 for the corresponding period of 2020. Our Treatment Segment revenue for the twelve months ended December 31, 2021 included approximately $1,286,000 recognized in the third quarter of 2021 from a request for equitable adjustment (“REA”) resulting from certain pricing provisions of a government related contract. The increase in revenue within our Treatment Segment in 2021 was also attributed to higher waste volume from commercial waste generators. Despite the increase in our Treatment Segment revenue, our Treatment Segment revenue has not returned to pre-pandemic level and has continued to be impacted by delays in waste shipments from certain customers resulting from the shutdown of waste generating activities in the field due to slow return-to-work schedules from the impact of COVID-19 since the start of the pandemic. However, we expect to see a gradual return in waste receipts from these customers starting in the second quarter of 2022. Additionally, delayed delivery of a new technology waste processing unit by our supplier due to supply chain issue as discussed above also negatively impacted our revenue as processing of associated revenue did not occur. Gross profit decreased $9,069,000 or 57.1% primarily due to the revenue decrease in the Services Segment. Selling, General, and Administrative (“SG&A”) expenses increased by approximately $1,071,000 or 9.1% for the twelve months ended December 31, 2021 as compared to the corresponding period of 2020.

PF Medical

As previously disclosed, our Medical Segment business, conducted through our majority-owned Polish subsidiary, Perma-Fix Medical S.A (“PFM Poland”), and PFM Poland’s wholly-owned subsidiary, Perma-Fix Medical Corporation, a Delaware corporation (“PFMC”), had not generated any revenue and had substantially reduced R&D activities of our medical isotope production technology due to the need for capital to fund these activities. During December 2021, we made the strategic decision to cease all R&D activities under the Medical Segment and sold 100% of our interest in PFM Poland for a nominal amount. As a condition precent to the sale of PFM Poland, we acquired PFMC after its conversion to a Delaware limited liability company. Additionally, as further condition precedent to the sale of PFM Poland, we released PFM Poland from unsatisfied trade payables owed by PFM Poland to us totaling approximately $2,537,000 (USD). As a result of the sale of PFM Poland, we deconsolidated the entity from our consolidated financial statements and recorded a non-cash “Loss on deconsolidation of subsidiary” of approximately $1,062,000 on our Consolidated Statement of Operations for the year ended December 31, 2021.

Business Environment

Our Treatment and Services Segments’ business continues to be heavily dependent on services that we provide to governmental clients, primarily as subcontractors for others who are prime contractors to government entities or directly as the prime contractor. We believe demand for our services will continue to be subject to fluctuations due to a variety of factors beyond our control, including, without limitation, the economic conditions, the manner in which the applicable government will be required to spend funding to remediate various sites, and/or the impact resulting from COVID-19 as discussed above. In addition, our governmental contracts and subcontracts relating to activities at governmental sites in the United States are generally subject to termination for convenience at any time at the government’s option, and our governmental contracts/task orders with the Canadian government authorities also allow the authorities to terminate the contract/task orders at any time for convenience. Our work under contracts/task order agreements with Canadian government authorities has substantially been completed. See “Known Trends and Uncertainties – Perma-Fix Canada, Inc. (“PF Canada”)” for additional discussion as to a terminated Canadian task order agreement. 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.

We are continually reviewing methods to raise additional capital to supplement our liquidity requirements, when needed, and reducing our operating costs. We continue to aggressively bid on various contracts, including potential contracts within the international markets.

Results of Operations

The reporting of financial results and pertinent discussions are tailored to our three reportable segments: The Treatment Segment ("Treatment"), the Services Segment ("Services"), and the Medical Segment ("Medical") (see "PF Medical" above for a discussion of the cease of all R&D activities under the Medical Segment and the sale of 100% of PFM Poland which comprises the Medical Segment).

Summary - Years Ended December 31, 2021 and 2020

Below are the results of continuing operations for years ended December 31, 2021 and 2020 (amounts in thousands):

(Consolidated)	2021	%	2020	%
Net revenues	$ 72,191	100.0	$ 105,426	100.0
Cost of goods sold	65,367	90.5	89,533	84.9
Gross profit	6,824	9.5	15,893	15.1
Selling, general and administrative	12,845	17.8	11,774	11.2
Research and development	746	1.0	762	.7
Loss on disposal of property and equipment	2	—	29	—
(Loss) income from operations	(6,769)	(9.3)	3,328	3.2
Interest income	26	—	140	.1
Interest expense	(247)	(.3)	(398)	(.4)
Interest expense – financing fees	(41)	(.1)	(294)	(.3)
Other	(86)	(.1)	211	.2
Gain (Loss) on extinguishment of debt	5,381	7.4	(27)	—
Loss on deconsolidation of subsidiary	(1,062)	(1.5)	—	—
(Loss) income from continuing operations before taxes	(2,798)	(3.9)	2,960	2.8
Income tax benefit	(3,890)	(5.4)	(189)	(.2)
Income from continuing operations	$ 1,092	1.5	$ 3,149	3.0

Revenue

Consolidated revenues decreased $33,235,000 for the year ended December 31, 2021 compared to the year ended December 31, 2020, as follows:

(In thousands)	2021	% Revenue	2020	% Revenue	Change	% Change
Treatment						
Government waste	$ 20,816	28.8	$ 21,234	20.1	$ (418)	(2.0)
Hazardous/non-hazardous [1]	4,915	6.8	5,072	4.8	(157)	(3.1)
Other nuclear waste	7,261	10.1	3,837	3.7	3,424	89.2
Total	32,992	45.7	30,143	28.6	2,849	9.5
Services						
Nuclear	37,834	52.4	73,458	69.7	(35,624)	(48.5)
Technical	1,365	1.9	1,825	1.7	(460)	(25.2)
Total	39,199	54.3	75,283	71.4	(36,084)	(47.9)
Total	$ 72,191	100.0	$ 105,426	100.0	$ (33,235)	(31.5)

[1] Includes wastes generated by government clients of $2,299,000 and $1,976,000 for the twelve months ended December 31, 2021 and 2020, respectively.

Treatment Segment revenue increased $2,849,000 or 9.5% for the twelve months ended December 31, 2021 over the same period in 2020. The increase in Other nuclear waste was attributed to higher waste volume from commercial waste generators as our Treatment Segment continues its efforts to expand into the

commercial market domestically and internationally. Revenue from government waste generators for the twelve months ended December 31, 2021 included approximately $1,286,000 recognized in the third quarter of 2021 from a REA resulting from certain pricing provisions of a contract. In 2021, revenue from government waste generators within our Treatment Segment continued to be impacted by delayed waste shipment from certain customers due to the impact of COVID-19. However, we expect to see a gradual return in waste receipts from these customers starting in the second quarter of 2022. As previously discussed, the delay in deployment of our new waste processing technology unit due to supply chain constraint also negatively impacted our Treatment Segment revenue in 2021. Services Segment revenue decreased $36,084,000 or 47.9% for the twelve months ended December 31, 2021 over the same period in 2020. As previously disclosed, our Services Segment revenue for the first half of 2021 was impacted primarily by delays in procurement actions and contract awards resulting from the impact of COVID-19 and the completion of a certain large contract in the second quarter of 2021 and the near completion of a certain other project. Since the end of the second quarter of 2021, our Services Segment was awarded a number of new contracts. However, due to COVID-19 impact and/or administrative delay by the customer under certain of these new awards, our Services Segment revenue was impacted by temporary curtailment/delay in work under certain of these new projects. Our Services Segment expects to see a ramp- up of activities from certain of these new projects starting in the second quarter of 2022. 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 decreased $24,166,000 for the year ended December 31, 2021, as compared to the year ended December 31, 2020, as follows:

(In thousands)	2021	% Revenue	2020	% Revenue	Change
Treatment	$ 26,274	79.6	$ 24,652	81.8	$ 1,622
Services	39,093	99.7	64,881	86.2	(25,788)
Total	$ 65,367	90.5	$ 89,533	84.9	$ (24,166)

Cost of goods sold for the Treatment Segment increased by approximately $1,622,000 or 6.6%. Treatment Segment's variable costs increased by approximately $894,000 primarily in disposal, transportation, material and supplies and lab services. Treatment Segment's overall fixed costs were higher by approximately $728,000 resulting from the following: general expenses were higher by $235,000 in various categories; salaries and payroll related expenses were higher by approximately $430,000; depreciation expenses were higher by approximately $100,000; regulatory expenses were higher by approximately $64,000; travel expenses were higher by approximately $14,000; and maintenance expenses were lower by $115,000. Services Segment cost of goods sold decreased $25,788,000 or 39.7% primarily due to lower revenue. The decrease in cost of goods sold was primarily due to lower salaries/payroll related, travel, and outside services expenses totaling approximately $22,680,000 with the remaining lower costs in material and supplies, disposal, regulatory, and general expenses. Included within cost of goods sold is depreciation and amortization expense of $1,654,000 and $1,555,000 for the twelve months ended December 31, 2021, and 2020, respectively.

Gross Profit

Gross profit for the year ended December 31, 2021 was $9,069,000 lower than 2020 as follows:

(In thousands)	2021	% Revenue	2020	% Revenue	Change
Treatment	$ 6,718	20.4	$ 5,491	18.2	$ 1,227
Services	106	0.3	10,402	13.8	(10,296)
Total	$ 6,824	9.5	$ 15,893	15.1	$ (9,069)

Treatment Segment gross profit increased by $1,227,000 or 22.3% and gross margin increased to 20.4% from 18.2% primarily due to higher revenue from the REA as discussed above. The decrease in gross profit and gross margin in the Services Segment was primarily due to lower revenue from fewer projects and

overall lower margin projects. Our overall Services Segment gross margin is impacted by our current projects which are competitively bid on and will therefore, have varying margin structures.

SG&A

SG&A expenses increased $1,071,000 for the year ended December 31, 2021 as compared to the corresponding period for 2020 as follows:

(In thousands)	2021	% Revenue	2020	% Revenue	Change
Administrative	$ 5,751	—	$ 5,537	—	$ 214
Treatment	4,030	12.2	3,819	12.7	211
Services	3,064	7.8	2,418	3.2	646
Total	$ 12,845	17.8	$ 11,774	11.2	$ 1,071

Administrative SG&A expenses were higher primarily due to the following: director fees were higher by approximately $250,000 resulting from one additional director and fee increases that went into effect January 1, 2021; outside services expenses were higher by approximately $41,000 resulting from more consulting/subcontract matters; and salaries and payroll related expenses were lower by approximately $77,000 primarily due to lower expenses related to our incentive plans and forfeiture of 401(k) plan matching funds contributed by us for former employees which failed to meet the 401(k) plan vesting requirements, offset by higher salaries and other payroll related expenses. Treatment Segment SG&A expenses were higher due to the following: salaries and payroll related expenses were higher by approximately $255,000 as in 2020 more of the resources were supporting a large Services Segment project; outside services expenses were higher by approximately $49,000 resulting from more consulting/subcontract matters; and general expenses were lower by $93,000 in various categories. The increase in SG&A expenses within our Services Segment was primarily due to the following: salaries and payroll related expenses were higher by approximately $287,000 primarily due to increased resources for bid and proposals; outside services expenses were higher by approximately $178,000 due to more consulting matters related to bid and proposals; bad debt expenses were higher by approximately $80,000 as in the first quarter of 2020, certain customer accounts which had previously been reserved for were collected; travel expenses were higher by $20,000; and general expenses were higher by $81,000 in various categories. Included in SG&A expenses is depreciation and amortization expense of $33,000 and $41,000 for the twelve months ended December 31, 2021 and 2020, respectively.

R&D

R&D expenses decreased $16,000 for the year ended December 31, 2021 as compared to the corresponding period of 2020 as follows:

(In thousands)	2021	2020	Change
Administrative	$ 40	$ 76	$ (36)
Treatment	221	243	(22)
Services	71	132	(61)
PF Medical	414	311	103
Total	$ 746	$ 762	$ (16)

Research and development 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. See "PF Medical" above for a discussion of the strategic decision made by us to cease all R&D activities under the Medical Segment during the fourth quarter of 2021.

Interest Income

Interest income decreased by approximately $114,000 for the twelve months ended December 31 2021 as compared to the corresponding period of 2020 primarily due to lower interest earned from our finite risk sinking fund.

Interest Expense
Interest expense decreased by approximately $151,000 for the twelve months ended December 31, 2021 as compared to the corresponding period of 2020 primarily due to lower interest expense from our declining term loan balance outstanding. Also, interest expense was lower resulting from the payoff of the $2,500,000 loan at year end 2020 that we had previously entered into with Robert Ferguson on April 1, 2019.

Interest Expense- Financing Fees
Interest expense-financing fees decreased by approximately $253,000 for the twelve months ended December 31, 2021 as compared to the corresponding period 2020 primarily due to debt discount/debt issuance costs that became fully amortized as financing fees at year end 2020 in connection with the issuance of our Common Stock and a Warrant as consideration for us receiving the $2,500,000 loan from Robert Ferguson dated April 1, 2019.

Income Taxes
We regularly assess the likelihood that the deferred tax asset will be recovered from future taxable income. We consider projected future taxable income and ongoing tax planning strategies, then record a valuation allowance to reduce the carrying value of the net deferred income taxes to an amount that is more likely than not to be realized. For the year ended December 31, 2020, we maintained a full valuation allowance against net deferred income tax assets because insufficient evidence existed to support the realization of any future income tax benefits. Since the end of the second quarter of 2021, however, we entered into a number of new contracts awarded to the Company's Services Segment (including a contract award with a value of approximately $40,000,000 for the decommissioning of a navy ship). As a result of these new contracts, we expected future profitability and improved overall prospects of future business. As such, as of September 30, 2021, we determined that it was more likely than not that we would be able to realize a portion of the deferred income tax assets. As a result, a deferred income tax benefit in the amount of approximately $2,351,000 attributable to the valuation allowance release on beginning of year deferred tax assets primarily related to U.S. Federal income taxes was realized in the three months ended September 30, 2021. We continue to maintain a valuation allowance against certain state and foreign tax attributes that may not be realizable along with the capital loss carryover generated during 2021 that we do not expect to realize.

We had income tax benefits of $3,890,000 and $189,000 for continuing operations for the twelve months ended December 31, 2021 and 2020, respectively. Our effective tax rates were approximately 139.0% and (6.4%) for the twelve months ended December 31, 2021 and 2020, respectively. Our effective tax rate for the twelve months ended December 31, 2021 was substantially impacted by the release of valuation allowance as discussed above. Our tax rate for the twelve months ended December 31, 2020 was impacted by the full valuation on our net deferred tax assets. For the twelve months ended December 31, 2021, the primary reasons for the differences between our effective tax rate and statutory tax rate were due to the aforementioned release of valuation allowance and the forgiveness of our PPP Loan which is included in our Consolidated Statement of Operations as "Gain on extinguishment of debt" but is exempt from income taxes.

Backlog
Our Treatment Segment maintains a backlog of stored waste, which represents waste that has not been processed. The backlog is principally a result of the timing and complexity of the waste being brought into the facilities and the selling price per container. At December 31, 2021, our Treatment Segment had a backlog of approximately $7,129,000, as compared to approximately $7,631,000 at December 31, 2020. Additionally, the time it takes to process waste from the time it arrives may increase due to the types and complexities of the waste we are currently receiving. We typically process our backlog during periods of low waste receipts, which historically has been in the first or fourth quarters.

Discontinued Operations and Environmental Contingencies
Our discontinued operations consist of all our subsidiaries included in our Industrial Segment which encompasses subsidiaries divested in 2011 and prior and three previously closed locations.

Our discontinued operations had no revenue for the twelve months ended December 31, 2021 and 2020. We incurred net losses of $421,000 (net of tax benefit of $139,000) and $412,000 (net of tax expense of $0)

for our discontinued operations for the twelve months ended December 31, 2021 and 2020, respectively. We have three environmental remediation projects, all within our discontinued operations, which principally entail the removal/remediation of contaminated soil, and, in most cases, the remediation of surrounding ground water. Our loss for fiscal year 2021 within our discontinued operations included an increase of $100,000 made to the remediation reserve for our PFSG subsidiary due to reassessment of the reserve. See a discussion of the environmental reserves and the related liabilities in “Part II - Item 8 – Financial Statements and Supplementary Data – Notes to Consolidate Financial Statements – Note 9 – Discontinued Operations – Environmental Liabilities.”

Liquidity and Capital Resources
Our cash flow requirements during the twelve months ended December 31, 2021 were primarily financed by our operations, credit facility availability and an equity raise that was consummated at the end of the third quarter of 2021 which we received gross proceeds of approximately $6,200,000 from subscription agreements that we entered into with certain institutional and retail investors for the sale and issuance of 1,000,000 shares of our Common Stock in a registered direct offering (see “Financing Activities” below for additional information on this equity raise). At December 31, 2021, we had cash on hand of approximately $4,440,000. As previously disclosed, we have ceased all R&D activities under our Medical Segment and sold our majority-owned subsidiary, PFM Poland. Subject to the impact of COVID-19 as discussed above, 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, and planned capital expenditures. We plan to fund these requirements from our operations, credit facility availability, our capital expenditure line, and cash on hand. We are continually reviewing operating costs and reviewing the possibility of further reducing operating costs and non-essential expenditures to bring them in line with revenue levels, when necessary. At this time, we believe that our cash flows from operations, our available liquidity from our credit facility, our capital expenditure line and our cash on hand should be sufficient to fund our operations for the next twelve months. However, due to the uncertainty of COVID-19, there are no assurances such will be the case. See discussion under “Liquidity and Capital Resources – Investing Activities” as to potential funding of an investment under the joint venture term sheet.

The following table reflects the cash flow activity for the year ended December 31, 2021 and the corresponding period of 2020:

(In thousands)	2021	2020
Cash (used in) provided by operating activities of continuing operations	$ (6,316)	$ 7,867
Cash used in operating activities of discontinued operations	(521)	(499)
Cash used in investing activities of continuing operations	(1,564)	(1,711)
Cash provided by investing activities of discontinued operations	—	118
Cash provided by financing activities of continuing operations	4,943	1,892
Effect of exchange rate changes on cash	(1)	6
(Decrease) increase in cash and finite risk sinking fund (restricted cash)	$ (3,459)	$ 7,673

At December 31, 2021, we were in a positive cash position with no revolving credit balance. At December 31, 2021, we had cash on hand of approximately $4,440,000, which includes account balances of our foreign subsidiaries totaling approximately $26,000.

Operating Activities
Accounts receivable, net of allowances for doubtful accounts, totaled $11,372,000 at December 31, 2021, an increase of $1,713,000 from the December 31, 2020 balance of $9,659,000. The increase was primarily due to timing of accounts receivable collection and timing of invoicing. Our contracts with our customers are subject to various payment terms and conditions; therefore, our accounts receivable are impacted by these terms and conditions and the related timing of accounts receivable collections. Additionally, contracts with our customers may sometimes result in modifications which can cause delays in collections.

Unbilled receivables totaled $8,995,000 at December 31, 2021, a decrease of $5,458,000 from the

December 31, 2020 balance of $14,453,000. The decrease in unbilled receivables was primarily within our Services Segment due to invoicing and collection of accounts receivable on certain large projects which have been completed or are near completion.

Accounts payable, totaled $11,975,000 at December 31, 2021, a decrease of $3,407,000 from the December 31, 2020 balance of $15,382,000. 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 working capital of $4,060,000 (which included working capital of our discontinued operations) at December 31, 2021, as compared to working capital of $3,672,000 at December 31, 2020. Our working capital was positively impacted by the forgiveness of the entire balance of our Paycheck Protection Program ("PPP") Loan, along with accrued interest, by the U.S. Small Business Administration ("SBA") effective June 15, 2021 (see "CARES Act – PPP Loan" for information on this loan") and the proceeds that we received from subscription agreements that we entered into with certain institutional and retail investors, for the sale and issuance of 1,000,000 shares of our Common Stock in a registered direct offering (see "Financing Activities" below for a discussion of this direct offering). The positive impact was reduced by our results of operations which were heavily impacted from COVID-19 as discussed above.

Investing Activities

During 2021, our purchases of capital equipment totaled approximately $2,162,000, of which $585,000 was subject to financing, with the remaining funded from cash from operations and our credit facility. We have budgeted approximately $2,000,000 for 2022 capital expenditures primarily for our Treatment and Services Segments to maintain operations and regulatory compliance requirements and support revenue growth. Certain of these budgeted projects may either be delayed until later years or deferred altogether. 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.

During March 2022, we signed a joint venture term sheet addressing plans to partner with Springfields Fuels Limited ("SFL"), an affiliate of Westinghouse Electric Company LLC, to develop and manage a nuclear waste-materials treatment facility (the "Facility") in the United Kingdom. The Facility is for the purpose of expanding the partners' waste treatment capabilities for the European nuclear market. It is expected that upon finalization of a partnership agreement, SFL will have an ownership interest of fifty-five (55) percent and our interest will be forty-five (45) percent. The finalization, form and capitalization of this unpopulated partnership is subject to numerous conditions, including but not limited to, completion and execution of a definitive agreement and facility design and the granting of required regulatory, lender or permitting approvals. Upon finalization of this venture, we will be required to make an investment in this venture. The amount of our investment, the period of which it is to be made and the method of funding are to be determined.

Financing Activities

We entered into a Second Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated May 8, 2020 ("Loan Agreement"), with PNC National Association ("PNC"), acting as agent and lender. The Loan Agreement provides us with the following credit facility with a maturity date of March 15, 2024: (a) up to $18,000,000 revolving credit ("revolving credit") and (b) a term loan ("term loan") of approximately $1,742,000, requiring monthly installments of $35,547. 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.

During 2021, we entered into several amendments to our Loan Agreement with our lender, which provided the following, among other things:

- revised our fixed charge coverage ratio ("FCCR") calculation requirement which allows for the add-back of approximately $5,318,000 in eligible expenses that were incurred and covered by the PPP Loan that we received in 2020. The add-back is to be applied retroactively to the second and third

quarters of 2020. (see below for a discussion of the PPP Loan);

- a capital expenditure line of up to $1,000,000 with advances on the line, subject to certain limitations, permitted for up to twelve months starting May 4, 2021 (the "Borrowing Period"). Only interest is payable on advances during the Borrowing Period (see annual rate of interest below on the capital expenditure line). At the end of the Borrowing Period, the total amount advanced under the line will amortize equally based on a five-year amortization schedule with principal payment due monthly plus interest. At the maturity date of the Loan Agreement, any unpaid principal balance plus interest, if any, will become due. No advance on the capital line has been made as of December 31, 2021.
- waived our failure to meet the minimum quarterly FCCR requirement for the second quarter of 2021;
- removed the quarterly FCCR testing requirement for the third quarter of 2021;
- reinstated the quarterly FCCR testing requirement starting for the fourth quarter of 2021 and revised the methodology to be used in calculating the FCCR for the quarters ending December 31, 2021, March 31, 2022, and June 30, 2022 (with no change to the minimum 1.15:1 ratio requirement for each quarter); and
- required maintenance of a minimum of $3,000,000 in borrowing availability under the revolving credit until the minimum FCCR requirement for the quarter ended December 31, 2021 has been met and certified to the lender.

On March 29, 2022, we entered into an amendment to our Loan Agreement with our lender which provided, among other things, the following:

- waived our failure to meet the minimum quarterly FCCR requirement for the fourth quarter of 2021;
- removes the quarterly FCCR testing requirement for the first quarter of 2022;
- reinstates the quarterly FCCR testing requirement starting for the second quarter of 2022 and revises the methodology to be used in calculating the FCCR for the quarters ending June 30, 2022, September 30, 2022, and December 31, 2022 (with no change to the minimum 1.15:1 ratio requirement for each quarter);
- requires maintenance of a minimum of $3,000,000 in borrowing availability under the revolving credit until the minimum FCCR requirement for the quarter ended June 30, 2022 has been met and certified to the lender; and
- revises the annual rate used to calculate the Facility Fee (as defined in the Loan Agreement) on the revolving credit, with addition of the capital expenditure line, from 0.375% to 0.500%. Upon meeting the minimum FCCR requirement of 1;15:1 on a twelve month trailing basis, the Facility Fee rate of 0.375% will be reinstated.

In connection with the amendment, we paid our lender a fee of $15,000.

Pursuant to our Loan Agreement, as amended, payment of annual rate of interest due on the revolving credit is at prime (3.25% at December 31, 2021) plus 2% or London InterBank Offer Rate ("LIBOR") plus 3.00% and the term loan and capital expenditure line at prime plus 2.50% or LIBOR plus 3.50%. Under the LIBOR option of interest payment, a LIBOR floor of 0.75% applies in the event that LIBOR falls below 0.75% at any point in time.

We may terminate our Loan Agreement, as amended, upon 90 days' prior written notice upon payment in full of our obligations under the Loan Agreement. We agreed to pay PNC 1.0% of the total financing had we paid off our obligations on or before May 7, 2021 and 0.5% of the total financing if we pay off our obligations after May 7, 2021 but prior to or on May 7, 2022. No early termination fee will apply if we pay off our obligations under the Loan Agreement after May 7, 2022.

Our credit facility under our Loan Agreement, as amended, 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. We met our financial covenant requirements in the first quarter of 2021. Our FCCR calculation in the first quarter of 2021 included the add-back of approximately $5,318,000 in eligible expenses that were incurred and covered by the PPP Loan that we received in 2020 as permitted by the amendment dated May 4, 2021 as discussed above. We did not meet our FCCR requirement in the second quarter of 2021; however, this non-compliance was waived by our lender as discussed above. Testing of our FCCR was not required for the third quarter 2021 pursuant to the August 10, 2021 amendment to the Loan Agreement as discussed above. We met our financial covenant requirements for the fourth quarter of 2021, with the exception of our FCCR requirement; however, this non-compliance of our FCCR requirement was waived by our lender pursuant to an amendment to our Loan Agreement as discussed above. Additionally, testing of the FCCR requirement is not required for the first quarter of 2022 pursuant to this same amendment. We expect to meet our quarterly financial covenant requirements for the next twelve months under our Loan Agreement, subject to no FCCR testing requirement for the first quarter of 2022.

On September 30, 2021, we entered into subscription agreements with certain institutional and retail investors, pursuant to which we sold and issued, in a registered direct offering, an aggregate of 1,000,000 shares of our Common Stock, at a negotiated purchase price per share of $6.20, for aggregate gross proceeds to us of approximately $6,200,000.

The Coronavirus Aid, Relief, and Economic Security Act (“CARES Act”)

PPP Loan

On April 14, 2020, we entered into a promissory note under the PPP with PNC, our credit facility lender, which had a balance of approximately $5,318,000 (the “PPP Loan”). The PPP was established under the CARES Act and is administered by the SBA. The CARES Act was subsequently amended by the Paycheck Protection Program Flexibility Act of 2020 (“Flexibility Act”). Proceeds from the promissory note was used by us for eligible payroll costs, mortgage interest, rent and utility costs as permitted under the Flexibility Act. The annual interest rate on the PPP Loan is 1.0%

On October 5, 2020, we applied for forgiveness on repayment of the PPP Loan as permitted under the Flexibility Act. On July 1, 2021, we were notified by PNC that the entire balance of the PPP Loan of approximately $5,318,000, along with accrued interest of approximately $63,000 was forgiven by the SBA, effective June 15, 2021. Accordingly, we recorded the entire forgiven PPP Loan balance, along with accrued interest, totaling approximately $5,381,000 as “Gain on extinguishment of debt” on our Consolidated Statement of Operations for the year ended 2021.

Deferral of Employment Tax Deposits

The Flexibility Act provides employers the option to defer the payment of an employer’s share of social security taxes beginning on March 27, 2020 through December 31, 2020, with 50% of the amount of social security taxes deferred to become due on December 31, 2021 with the remaining 50% due on December 31, 2022. Our deferment of such taxes totaled approximately $1,252,000 of which approximately $626,000 was paid in December 2021. At December 31, 2021, the remaining $626,000 in deferred social security taxes was included in “Accrued expenses” within current liabilities in our Consolidated Balance Sheets.

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 December 31, 2021, the total amount of standby letters of credit outstanding totaled approximately $3,020,000 and the total amount of bonds outstanding totaled approximately $50,109,000. We also provide closure and post-closure requirements through a financial assurance policy for certain of our Treatment Segment facilities through AIG. At December 31, 2021, the closure and post-closure requirements for these facilities were approximately $20,403,000.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared based upon the selection and application of US GAAP, which may require us to make estimates, judgments and assumptions that affect amounts reported in our financial statements and accompanying notes. The accounting policies below are those we believe affect the more significant estimates and judgments used in preparation of our financial statements. Our other

accounting policies are described in the accompanying notes to our consolidated financial statements of this Form 10-K (see "Item 8 – Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – "Note 2 – Summary of Significant Accounting Policies"):

Intangible Assets. Intangible assets consist primarily of the recognized value of the permits required to operate our business. We continually monitor the propriety of the carrying amount of our permits to determine whether current events and circumstances warrant adjustments to the carrying value.

Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of October 1, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, we perform a quantitative test to determine the fair value. The impairment loss, if any, is measured as the excess of the carrying value of the asset over its fair value. Significant judgments are inherent in these analyses and include assumptions for, among other factors, forecasted revenue, gross margin, growth rate, operating income, timing of expected future cash flows, and the determination of appropriate long-term discount rates.

Impairment testing of our permits related to our Treatment reporting unit as of October 1, 2021 and 2020 resulted in no impairment charges.

Intangible assets that have definite useful lives are amortized using the straight-line method over the estimated useful lives (with the exception of customer relationships which are amortized using an accelerated method) and are excluded from our annual intangible asset valuation review as of October 1. Intangible assets with definite useful lives are also tested for impairment whenever events or changes in circumstances indicate that the asset's carrying value may not be recoverable.

Accrued Closure Costs and Asset Retirement Obligations ("ARO"). Accrued closure costs represent our estimated environmental liability to clean up our facilities as required by our permits, in the event of closure. ASC 410, "Asset Retirement and Environmental Obligations" requires that the discounted fair value of a liability for an ARO be recognized in the period in which it is incurred with the associated ARO capitalized as part of the carrying cost of the asset. The recognition of an ARO requires that management make numerous estimates, assumptions and judgments regarding such factors as estimated probabilities, timing of settlements, material and service costs, current technology, laws and regulations, and credit adjusted risk-free rate to be used. This estimate is inflated, using an inflation rate, to the expected time at which the closure will occur, and then discounted back, using a credit adjusted risk free rate, to the present value. ARO's are included within buildings as part of property and equipment and are depreciated over the estimated useful life of the property. In periods subsequent to initial measurement of the ARO, we must recognize period-to-period changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flow. Increases in the ARO liability due to passage of time impact net income as accretion expense and are included in cost of goods sold in the Consolidated Statements of Operations. Changes in the estimated future cash flows costs underlying the obligations (resulting from changes or expansion at the facilities) require adjustment to the ARO liability calculated and are capitalized and charged as depreciation expense, in accordance with our depreciation policy.

Recent Accounting Pronouncements
See "Item 8 – Financial Statements and Supplementary Data" – Notes to Consolidated Financial Statements" – Note 2 – Summary of Significant Accounting Policies" for the recent accounting pronouncements that have been adopted during the year ended December 31, 2021, or will be adopted in future periods.

Known Trends and Uncertainties
Economic Conditions. Our business continues to be heavily dependent on services that we provide to governmental clients, primarily as subcontractors for others who are prime contractors to government authorities (particularly the DOE and DOD) or directly as the prime contractor. We believe demand for our services will continue to be subject to fluctuations due to a variety of factors beyond our control, including without limitation, the economic conditions, COVID-19 impact, and the manner in which the government

entity will be required to spend funding to remediate various sites. In addition, our U.S. governmental contracts and subcontracts relating to activities at governmental sites are generally subject to termination for convenience at any time at the option of the government. Our TOAs with the Canadian government also provide that the government may terminate a TOA at any time for convenience (see below "Perma-Fix Canada, Inc. ("PF Canada")" below for a discussion of a notice of termination ("NOT") that we received under a contract with a Canadian government authority during the fourth quarter of 2021). 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.

Significant Customers. Our Treatment and Services Segments have significant relationships with the U.S governmental authorities through contracts entered into indirectly as subcontractors for others who are prime contractors or directly as the prime contractor to government authorities. We also had significant relationships with Canadian government authorities primarily through TOAs entered into with Canadian government authorities. Project work under TOAs with Canadian government authorities has substantially been completed. Our inability to continue under existing contracts that we have with the U.S government (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 $60,812,000, or 84.2%, of our total revenue during 2021, as compared to $96,582,000, or 91.6%, of our total revenue during 2020.

Revenue generated by us as a subcontractor to a customer for a remediation project performed for a government entity (the DOE) within our Services Segment in 2021 and 2020 accounted for approximately $8,526,000 or 11.8% and $41,011,000 or 38.9% (included in revenue generated relating to government clients above) of our total revenue for 2021 and 2020, respectively. This remediation project included among other things, decontamination support of a building. This project was completed in the second quarter of 2021.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, we do not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Perma-Fix Canada, Inc. ("PF Canada")

During the fourth quarter of 2021, PF Canada received a NOT from Canadian Nuclear Laboratories, LTD. ("CNL") on a TOA that PF Canada entered into with CNL in May 2019 for remediation work within Ontario, Canada. The NOT was received after work under the TOA was substantially completed. CNL may terminate the TOA at any time for convenience. As of December 31, 2021, PF Canada has approximately $2,640,000 in unpaid receivables and unbilled costs due from CNL as a result of work performed under the TOA. Additionally, CNL has approximately $871,000 in contractual holdback under the TOA that is payable to PF Canada. CNL also established a bond securing approximately $1,900,000 (CAD) to cover certain issue raised in connection with the TOA. Under the TOA, CNL may be entitled to set off certain costs and expenses incurred by CNL in connection with the termination of the TOA, including the bond as discussed above, against amounts owed to PF Canada for work performed by PF Canada or its subcontractors. PF Canada continues to be in discussions with CNL to finalize the amounts due to PF Canada under the TOA and continues to believes these amounts are due and payable.

COVID-19 Impact. See "COVID-19 Impact" within this MD&A for a discussion of the impact of COVID-19 on our 2021 financial results and the potential impact it may have to our future financial results and business operations.

Supply Chain. We use various commercially available materials and supplies which include among other things chemicals, containers/drums and PPE in our operations. We generally source these items from

various suppliers in order to take advantage of competitive pricing.

We also utilize various types of equipment, which include among other things trucks, flatbeds, lab equipment, heavy machineries, in carrying out our business operations. Our equipment may be obtained through direct purchase, rental option or leases. Within our Services Segment, equipment required for projects are often provided by our subcontractors as part of our contract agreement with the subcontractor. Due to some of our specialized waste treatment processes, certain equipment that we utilize are designed and built to our specifications. We rely on various commercial equipment suppliers for the construction of these equipment. Due to recent supply chain constraints, we experienced a delay in the delivery of a new waste processing unit to us by our supplier due to shortage of parts required for the construction of the unit, among other things. Delivery of this unit was expected during the third quarter of 2021 but did not occur until the first quarter of 2022. The supply chain interruption delayed deployment of our new technology which negatively impacted our revenue for 2021 as associated revenue was not able to be generated. Continued increases in pricing and/or potential delays in procurements of material and supplies and equipment required for our operations resulting from further tightening supply chain could further adversely affect our operations and profitability.

Potential Partnership with Springfields Fuels Limited. As discussed above, we have signed a term sheet addressing plans to partner with Springfields Fuels Limited, an affiliate of Westinghouse Electric Company LLC, to develop and manage a nuclear waste-materials treatment facility in the United Kingdom. See “Liquidity and Capital Resources – Investing Activities” of this MD&A for a discussion of this transaction.

Inflation and Cost Increases. Continued increases in any of our operating costs, including changes in fuel prices (which impacts our transportation costs), wage rates, supplies, and utility costs, may increase our overall cost of goods sold or operating expenses. These cost increases may be the result of inflationary pressures that could further reduce profitability. Competitive pressures in our industry may have the effect of inhibiting our ability to reflect these increased costs in the prices of our services that we provide to our customers and therefore reduce our profitability.

Related Party Transactions

See a discussion of the Company’s related party transactions in “Item 8 – Financial Statements and Supplementary Data – Notes to Consolidate Financial Statements – Note 17 – Related Party Transactions and Note 21 – Subsequent Events – Executive Compensation.”

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not required under Regulation S-K for smaller reporting companies.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

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;
- loss of a customer;
- reductions in the level of government funding in future years;
- reducing operating costs and non-essential expenditures;
- ramp up of activities under new projects;

- gradual return in waste shipments;
- ability to meet loan agreement covenant requirements;
- cash flow requirements;
- accounts receivable impact and collections;
- sufficient liquidity to continue business;
- future results of operations and liquidity;
- effect of economic disruptions on our business;
- curtail capital expenditures;
- government funding for our services;
- may not have liquidity to repay debt if our lender accelerates payment of our borrowings;
- manner in which the applicable government will be required to spend funding to remediate various sites;
- competitive conditions;
- Canadian receivable;
- funding operations;
- fund capital expenditures from cash from operations, credit facility availability, and/or financing;
- impact from COVID-19;
- contract awards;
- fund remediation expenditures for sites from funds generated internally;
- collection of accounts receivables;
- compliance with environmental regulations;
- potential effect of being a PRP;
- potential sites for violations of environmental laws and remediation of our facilities;
- existing laws or new environmental laws and regulations on our operations
- adequate insurance coverage;
- continuation of contracts with federal government; and
- further tightening of supply chain;

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;
- contract bids, including international markets;
- material reduction in revenues;
- inability 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 government agencies or subcontracts involving government agencies or reduction in amount of waste delivered to the Company under the contracts or subcontracts;
- renegotiation of contracts involving government agencies ;
- 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;
- impact of the COVID-19;
- delays in waste shipments and delay in activities under new contracts;
- new governmental regulations;
- lender refuses to waive non-compliance or revise our covenant so that we are in compliance;
- continued supply chain interruptions;
- other unanticipated factors; and
- risk factors contained in Item 1A of this report.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Financial Statement Schedules

In accordance with the rules of Regulation S-X, schedules are not submitted because they are not applicable to or required by the Company.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Perma-Fix Environmental Services, Inc.

Opinion on the financial statements
We have audited the accompanying consolidated balance sheets of Perma-Fix Environmental Services, Inc. (a Delaware corporation) (and subsidiaries) (the "Company") as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for the years then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"), and our report dated April 6, 2022 expressed an adverse opinion.

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

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

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

Revenue recognition for certain revenue contracts
As described further in Note 2 to the financial statements, the Company has certain fixed price contracts that are long term in nature. A subset of these contracts that commenced in 2021 have non-standard terms that impact revenue recognition and require significant effort and judgment by management. We identified revenue recognition for these contracts as a critical audit matter.

The principal consideration for our determination that revenue recognition for these contracts is a critical audit matter are that there is considerable auditor effort and judgment required to analyze and evaluate

contracts for the types of terms and conditions that impact revenue recognition. In addition, as described in our report on the Company's internal control over financial reporting as of December 31, 2021 a material weakness was identified related to revenue recognition for non-standard revenue contracts.

Our audit procedures related to revenue recognition for these contracts included the following, among others,

- We obtained and inspected a selection of long-term, non-standard contracts to understand the terms and conditions and the related impact on revenue recognition, specifically the identification of:
    - Contract term
    - Performance obligations
    - Determination of measure of progress
- We obtained and recalculated management's estimate to complete the project(s)
- We sampled underlying costs supporting the measure of progress and agreed to underlying documentation
- We evaluated the appropriateness of the recording of revenue for both billed and unbilled amounts related to these contracts.

Realizability of deferred tax assets
As described further in Note 13 to the financial statements, deferred tax assets are reduced by a valuation allowance if, based on the evaluation of positive and negative evidence, in management's judgment it is more likely than not that some portion, or all, of the deferred tax assets will not be realized. Once established, the valuation allowance is released when, based on the evaluation of positive and negative evidence, management concludes that related deferred tax assets are more likely than not to be realized. During the year ended December 31, 2021, management concluded that sufficient positive evidence existed to release its valuation allowance related to its federal deferred tax assets, resulting in an income tax benefit of $2.4 million for the year ended December 31, 2021. We identified the realizability of deferred tax assets as a critical audit matter.

The principal considerations for our determination that the realizability of deferred tax assets is a critical audit matter is that the projected financial information related to the profitability of the Company which is reliant on the ability to predict future revenue is subject to significant management judgments in determining whether the net deferred tax assets are more likely than not to be realized in the future, which in turn led to a high degree of auditor judgment and effort in performing procedures and evaluating audit evidence relating to management's assessment of the realization of deferred tax assets.

Our audit procedures related to the realizability of deferred tax assets included the following, among others.

- We evaluated the design and tested the operating effectiveness of the key controls over the Company's assessment of the positive and negative evidence and evaluation of the realizability of deferred tax assets.
- We evaluated the prospective financial information related to future profitability including inspecting specific long-term contracts.
- We evaluated management's assessment of potential net operating loss carryforward limitations.
- We utilized individuals with specialized skill and knowledge in income taxes to evaluate the application of tax laws and regulations used in the Company's assumptions and calculations.

We have served as the Company's auditor since 2014.

/s/GRANT THORNTON LLP

Atlanta, Georgia
April 6, 2022

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED BALANCE SHEETS
As of December 31,

(Amounts in Thousands, Except for Share and Per Share Amounts)	2021	2020
ASSETS		
Current assets:		
Cash	$ 4,440	$ 7,924
Accounts receivable, net of allowance for doubtful accounts of $85 and $404, respectively	11,372	9,659
Unbilled receivables	8,995	14,453
Inventories	680	610
Prepaid and other assets	4,472	3,967
Current assets related to discontinued operations	15	22
Total current assets	29,974	36,635
Property and equipment:		
Buildings and land	20,631	20,139
Equipment	22,131	22,090
Vehicles	443	457
Leasehold improvements	23	23
Office furniture and equipment	1,316	1,413
Construction-in-progress	2,997	1,569
Total property and equipment	47,541	45,691
Less accumulated depreciation	(28,932)	(27,908)
Net property and equipment	18,609	17,783
Property and equipment related to discontinued operations	81	81
Operating lease right-of-use assets	2,460	2,287
Intangibles and other long term assets:		
Permits	9,476	8,922
Other intangible assets - net	894	875
Finite risk sinking fund (restricted cash)	11,471	11,446
Deferred tax assets	3,527	—
Other assets	809	890
Total assets	$ 77,301	$ 78,919

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED BALANCE SHEETS, CONTINUED
As of December 31,

(Amounts in Thousands, Except for Share and per Share Amounts)	2021	2020
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 11,975	$ 15,382
Accrued expenses	5,078	6,381
Disposal/transportation accrual	1,065	1,220
Deferred revenue	5,580	4,614
Accrued closure costs - current	578	75
Current portion of long-term debt	393	3,595
Current portion of operating lease liabilities	406	273
Current portion of finance lease liabilities	333	525
Current liabilities related to discontinued operations	506	898
Total current liabilities	25,914	32,963
Accrued closure costs	6,613	6,290
Deferred tax liabilities	—	471
Long-term debt, less current portion	600	3,134
Long-term operating lease liabilities, less current portion	2,029	2,070
Long-term finance lease liabilities, less current portion	884	662
Other long-term liabilities	—	626
Long-term liabilities related to discontinued operations	677	252
Total long-term liabilities	10,803	13,505
Total liabilities	36,717	46,468
Commitments and Contingencies (Note 15)		
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; 13,222,552 and 12,161,539 shares issued, respectively; 13,214,910 and 12,153,897 shares outstanding, respectively	13	12
Additional paid-in capital	114,307	108,931
Accumulated deficit	(73,620)	(74,455)
Accumulated other comprehensive loss	(28)	(207)
Less Common Stock in treasury, at cost; 7,642 shares	(88)	(88)
Total Perma-Fix Environmental Services, Inc. stockholders' equity	40,584	34,193
Non-controlling interest	—	(1,742)
Total stockholders' equity	40,584	32,451
Total liabilities and stockholders' equity	$ 77,301	$ 78,919

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
For the years ended December 31,

(Amounts in Thousands, Except for Per Share Amounts)	2021	2020
Net revenues	$ 72,191	$ 105,426
Cost of goods sold	65,367	89,533
Gross profit	6,824	15,893
Selling, general and administrative expenses	12,845	11,774
Research and development	746	762
Loss on disposal of property and equipment	2	29
(Loss) income from operations	(6,769)	3,328
Other income (expense):		
Interest income	26	140
Interest expense	(247)	(398)
Interest expense-financing fees	(41)	(294)
Other	(86)	211
Gain (loss) on extinguishment of debt (Note 10)	5,381	(27)
Loss on deconsolidation of subsidiary (Note 14)	(1,062)	—
(Loss) income from continuing operations before taxes	(2,798)	2,960
Income tax benefit	(3,890)	(189)
Income from continuing operations, net of taxes	1,092	3,149
Loss from discontinued operations (Note 9)	(421)	(412)
Net income	671	2,737
Net loss attributable to non-controlling interest	(164)	(123)
Net income attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ 835	$ 2,860
Net income (loss) per common share attributable to Perma-Fix Environmental Services, Inc. stockholders - basic:		
Continuing operations	$ .10	$ .27
Discontinued operations	(.03)	(.03)
Net income per common share	$ .07	$ .24
Net income (loss) per common share attributable to Perma-Fix Environmental Services, Inc. stockholders - diluted:		
Continuing operations	$ .10	$ .26
Discontinued operations	(.03)	(.03)
Net income per common share	$ .07	$ .23
Number of common shares used in computing net income (loss) per share:		
Basic	12,433	12,139
Diluted	12,673	12,347

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
For the years ended December 31,

(Amounts in Thousands)	2021	2020
Net income	$ 671	$ 2,737
Other comprehensive income:		
Foreign currency translation reclass to loss on deconsolidation of subsidiary (Note 14)	148	—
Foreign currency translation adjustments	31	4
Total other comprehensive income	179	4
Comprehensive income	850	2,741
Comprehensive loss attributable to non-controlling interest	(164)	(123)
Comprehensive income attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ 1,014	$ 2,864

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the years ended December 31,
(Amounts in Thousands, Except for Share Amounts)

	Common Stock		Additional Paid-In Capital	Common Stock Held In Treasury	Accumulated Other Comprehensive Income	Non-controlling Interest in Subsidiary	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount						
Balance at December 31, 2019	12,123,520	$ 12	$ 108,457	$ (88)	$ (211)	$ (1,619)	$ (77,315)	$ 29,236
Net income (loss)	—	—	—	—	—	(123)	2,860	2,737
Foreign currency translation	—	—	—	—	4	—	—	4
Issuance of Common Stock for services	34,135	—	232	—	—	—	—	232
Stock-Based Compensation	—	—	236	—	—	—	—	236
Issuance of Common Stock upon exercise of options	3,884	—	6	—	—	—	—	6
Balance at December 31, 2020	12,161,539	$ 12	$ 108,931	$ (88)	$ (207)	$ (1,742)	$ (74,455)	$ 32,451
Net (loss) income	—	—	—	—	—	(164)	835	671
Foreign currency translation	—	—	—	—	31	—	—	31
Deconsolidation of subsidiary (Note 14)	—	—	(1,004)	—	148	1,906	—	1,050
Issuance of Common Stock for services	60,723	—	427	—	—	—	—	427
Stock-Based Compensation	—	—	250	—	—	—	—	250
Issuance of Common Stock upon exercise of options	290	—	—	—	—	—	—	—
Sale of Common Stock, net of offering costs (Note 7)	1,000,000	1	5,703	—	—	—	—	5,704
Balance at December 31, 2021	13,222,552	$ 13	$ 114,307	$ (88)	$ (28)	$ —	(73,620)	$ 40,584

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31,

(Amounts in Thousands)	2021	2020
Cash flows from operating activities:		
Net income	$ 671	$ 2,737
Less: loss on discontinued operations (Note 9)	(421)	(412)
Income from continuing operations	1,092	3,149
Adjustments to reconcile net income from continuing operations to cash (used in) provided by operating activities:		
Depreciation and amortization	1,687	1,596
Interest on finance lease with purchase option	7	9
Loss on deconsolidation of subsidiary (Note 14)	1,062	—
(Gain) loss on extinguishment of debt (Note 10)	(5,381)	27
Amortization of debt issuance/debt discount costs	40	294
Deferred tax benefit	(3,860)	(119)
Provision for (recovery of) bad debt reserves	26	(101)
Loss on disposal of property and equipment	2	29
Issuance of common stock for services	427	232
Stock-based compensation	250	236
Changes in operating assets and liabilities of continuing operations:		
Accounts receivable	(1,739)	3,620
Unbilled receivables	5,458	(6,469)
Prepaid expenses, inventories and other assets	1,165	1,147
Accounts payable, accrued expenses and unearned revenue	(6,552)	4,217
Cash (used in) provided by continuing operations	(6,316)	7,867
Cash used in discontinued operations	(521)	(499)
Cash (used in) provided by operating activities	(6,837)	7,368
Cash flows from investing activities:		
Purchases of property and equipment (net)	(1,577)	(1,715)
Proceeds from sale of property and equipment	17	4
Deconsolidation of subsidiary - cash	(4)	—
Cash used in investing activities of continuing operations	(1,564)	(1,711)
Cash provided by investing activities of discontinued operations	—	118
Cash used in investing activities	(1,564)	(1,593)
Cash flows from financing activities:		
Borrowing on revolving credit	74,987	102,788
Repayments of revolving credit borrowings	(74,987)	(103,109)
Proceeds from issuance of long-term debt	—	5,666
Principal repayment of finance lease liabilities	(334)	(615)
Principal repayments of long term debt	(440)	(2,759)
Payment of debt issuance costs	(48)	(85)
Proceeds from sale of Common Stock, net of offering costs paid (Note 7)	5,765	—
Proceeds from issuance of Common Stock upon exercise of options	—	6
Cash provided by financing activities of continuing operations	4,943	1,892
Effect of exchange rate changes on cash	(1)	6
(Decrease) increase in cash and finite risk sinking fund (restricted cash) (Note 2)	(3,459)	7,673
Cash and finite risk sinking fund (restricted cash) at beginning of period (Note 2)	19,370	11,697
Cash and finite risk sinking fund (restricted cash) at end of period (Note 2)	$ 15,911	$ 19,370
Supplemental disclosure:		
Interest paid	$ 230	$ 366
Income taxes paid	47	70
Non-cash investing and financing activities:		
Equipment purchase subject to finance lease	556	856
Equipment purchase subject to financing	29	27

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

NOTE 1
DESCRIPTION OF BUSINESS AND BASIS OF PRESENTATION

Perma-Fix Environmental Services, Inc. (the Company, which may be referred to as we, us, or our), an environmental and technology know-how company, is a Delaware corporation, engaged through its subsidiaries, in three reportable segments:

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 four 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, 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 NEOSH instrumentation.

MEDICAL SEGMENT, which included: R&D of the Company's medical isotope production technology by the Company's majority-owned (approximately 60.54%) Polish subsidiary, Perma-Fix Medical S.A ("PFM Poland"), and PFM Poland's wholly-owned subsidiary, Perma-Fix Medical Corporation ("PFMC"). The Company's Medical Segment (or "PF Medical") had not generated any revenue. During December 2021, the Company made the strategic decision to cease all R&D activities under the Medical Segment which resulted in the sale of 100% of PFM Poland (See "Note 14 – PF Medical" for a discussion of this sale).

The Company's continuing operations consist of the operations of our subsidiaries/facilities as follow: Diversified Scientific Services, Inc. ("DSSI"), Perma-Fix of Florida, Inc. ("PFF"), Perma-Fix of Northwest Richland, Inc. ("PFNWR"), Safety & Ecology Corporation ("SEC"), Perma-Fix Environmental Services UK Limited ("PF UK Limited"), Perma-Fix of Canada, Inc. ("PF Canada"), PF Medical, East Tennessee Materials & Energy Corporation ("M&EC") (facility closure completed in 2019), Oak Ridge Environmental Waste Operations Center ("EWOC") and Perma-Fix ERRG, a variable interest entity ("VIE") for which we

are the primary beneficiary (See “Note 20 - Variable Interest Entities (“VIE”)” for a discussion of this VIE).

The Company’s discontinued operations (see Note 9) consist of operations of all our subsidiaries included in our Industrial Segment which encompasses subsidiaries divested in 2011 and prior and three previously closed locations.

Financial Positions and Liquidity
The Company’s 2021 financial results continued to be impacted by COVID-19 where we experienced continued waste shipment delays from certain customers within our Treatment Segment. However, the Company expects to see a gradual return in waste receipts from these customers starting in the second quarter of 2022 as the Company expects these customers to start easing up on COVID-19 restrictions, including reinstating return-to-work schedule in the upcoming months. Additionally, as a result of the constraint in supply chain, our Treatment Segment experienced a delay in the delivery of a new technology waste processing unit from our supplier which negatively impacted our revenue as the associated revenue was not able to be generated. Delivery of this unit had been expected during the third quarter of 2021 but did not occur until the first quarter of 2022. The Company’s Services Segment experienced delays in procurement actions and contract awards resulting primarily from the impact of COVID-19 in the first half of 2021. Since the end of the second quarter of 2021, the Services Segment was awarded a number of new contracts but due to customer administrative delay and/or continued COVID-19 impact experienced by certain customers, work under certain of these new awards was temporarily curtailed/delayed which negatively impacted our revenue. We expect to see a ramp-up in activities from certain of these new projects starting in the second quarter of 2022.

The Company’s cash flow requirements during the twelve months ended December 31, 2021 were primarily financed by our operations, our credit facility availability and an equity raise that the Company consummated at the end of the third quarter of 2021. The Company received approximately $6,200,000 in gross proceeds from this equity raise for the sale and issuance of 1,000,000 shares of the Company’s Common Stock (see “Note 7 – Common Stock Subscription Agreement” for a discussing of this equity raise). At December 31, 2021, the Company had borrowing availability under its revolving credit facility of approximately $8,692,000 which was based on a percentage of eligible receivables and subject to certain reserves and included its cash on hand of approximately $4,440,000. The Company has ceased all R&D activities under its Medical Segment and sold its majority-owned subsidiary, PFM Poland (see “Note 14 – PF Medical” for a discussion of the sale of PFM Poland). The Company’s 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, and planned capital expenditures. We plan to fund these requirements from our operations, credit facility availability, our capital expenditure line, and cash on hand. We are continually reviewing operating costs and reviewing the possibility of further reducing operating costs and non-essential expenditures to bring them in line with revenue levels, when necessary. At this time, we believe that our cash flows from operations, our available liquidity from our credit facility, our capital expenditure line and our cash on hand should be sufficient to fund our operations for the next twelve months.

As the situations surrounding COVID-19 continues to remain fluid, the full impact and extent of the pandemic on our financial results and liquidity cannot be estimated with any degree of certainty. We continue to closely monitor the impact of the COVID-19 pandemic on all aspects of our business.

NOTE 2
SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation
The Company’s consolidated financial statements include our accounts, those of our wholly-owned subsidiaries, our majority-owned Polish subsidiary (see “Note 15 – PF Medical” for a discussion on the sale of PFM Poland in December 2021), and Perma-Fix ERRG, a VIE for which we are the primary beneficiary as discussed above, after elimination of all significant intercompany accounts and transactions.

Use of Estimates
The Company prepares financial statements in conformity with accounting standards generally accepted in the United States ("U.S. GAAP"), which may require estimates of future cash flows and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as, the reported amounts of revenues and expenses during the reporting period. Due to the inherent uncertainty involved in making estimates, actual results could differ from those estimates.

Cash and Finite Risk Sinking Fund (Restricted Cash)
At December 31, 2021, the Company had cash on hand of approximately $4,444,000, which included account balances of our foreign subsidiaries totaling approximately $26,000. At December 31, 2020, the Company had cash on hand of approximately $7,924,000, which included account balances of our foreign subsidiaries totaling approximately $377,000. At December 31, 2021 and 2020, the Company had finite risk sinking funds of approximately $11,471,000 and $11,446,000, respectively, which represented cash held as collateral under the Company's financial assurance policy (see "Note 15 – Commitment and Contingencies – Insurance" for a discussion of this fund).

Accounts Receivable
Accounts receivable are customer obligations due under normal trade terms requiring payment within 30 or 60 days from the invoice date based on the customer type (government, broker, or commercial). The carrying amount of accounts receivable is reduced by an allowance for doubtful accounts, which is a valuation allowance that reflects management's best estimate of the amounts that will not be collected. The Company regularly reviews all accounts receivable balances that exceed 60 days from the invoice date and based on an assessment of current credit worthiness, estimates the portion, if any, of the balance that will not be collected. This analysis excludes government related receivables due to our past successful experience in their collectability. Specific accounts that are deemed to be uncollectible are reserved at 100% of their outstanding balance. The remaining balances aged over 60 days have a percentage applied by aging category, based on historical experience that allows us to calculate the total allowance required. Once the Company has exhausted all options in the collection of a delinquent accounts receivable balance, which includes collection letters, demands for payment, collection agencies and attorneys, the account is deemed uncollectible and subsequently written off. The write off process involves approvals from senior management based on required approval thresholds.

The following table sets forth the activity in the allowance for doubtful accounts for the years ended December 31, 2021 and 2020 (in thousands):

	Year Ended December 31,	
	2021	2020
Allowance for doubtful accounts - beginning of year	$ 404	$ 487
Provision for (recovery of) bad debt reserve	41	(101)
(Write-off) recovery of write-off	(360)	18
Allowance for doubtful accounts - end of year	$ 85	$ 404

Unbilled Receivables
Unbilled receivables are generated by differences between invoicing timing and our over time revenue recognition methodology used for revenue recognition purposes. As major processing and contract completion phases are completed and the costs are incurred, the Company recognizes the corresponding percentage of revenue. Within our Treatment Segment, the facilities experience delays in processing invoices due to the complexity of the documentation that is required for invoicing, as well as the difference between completion of revenue recognition milestones and agreed upon invoicing terms, which results in unbilled receivables. The timing differences occur for several reasons which include: partially from delays in the final processing of all wastes associated with certain work orders and partially from delays for analytical testing that is required after the facilities have processed waste but prior to our release of waste for disposal. The tasks relating to these delays can take months to complete but are generally completed within twelve months.

Unbilled receivables within our Services Segment can result from work performed under contracts but

invoice milestones have not yet been met and/or contract claims and pending change orders, including REA when work has been performed and collection of revenue is reasonably assured.

Inventories

Inventories consist of treatment chemicals, saleable used oils, and certain supplies. Additionally, the Company has replacement parts in inventory, which are deemed critical to the operating equipment and may also have extended lead times should the part fail and need to be replaced. Inventories are valued at the lower of cost or net realizable value with cost determined by the first-in, first-out method.

Disposal and Transportation Costs

The Company accrues for waste disposal based upon a physical count of the waste at each facility at the end of each accounting period. Current market prices for transportation and disposal costs are applied to the end of period waste inventories to calculate for the transportation and disposal accruals.

Property and Equipment

Property and equipment expenditures are capitalized and depreciated using the straight-line method over the estimated useful lives of the assets for financial statement purposes, while accelerated depreciation methods are principally used for income tax purposes. Generally, asset lives range from ten to forty years for buildings (including improvements and asset retirement costs) and three to seven years for office furniture and equipment, vehicles, and decontamination and processing equipment. Leasehold improvements are capitalized and amortized over the lesser of the term of the lease or the life of the asset. Maintenance and repairs are charged directly to expense as incurred. The cost and accumulated depreciation of assets sold or retired are removed from the respective accounts, and any gain or loss from sale or retirement is recognized in the accompanying Consolidated Statements of Operations. Renewals and improvements, which extend the useful lives of the assets, are capitalized.

Certain property and equipment expenditures are financed through leases. Amortization of financed leased assets is computed using the straight-line method over the estimated useful lives of the assets. At December 31, 2021, assets recorded under finance leases were $2,409,000 less accumulated depreciation of $475,000, resulting in net fixed assets under finance leases of $1,934,000. At December 31, 2020, assets recorded under finance leases were $2,285,000 less accumulated depreciation of $291,000, resulting in net fixed assets under finance leases of $1,994,000. These assets are recorded within net property and equipment on the Consolidated Balance Sheets.

Long-lived assets, such as property, plant and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of are separately presented in the balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated.

Our depreciation expense totaled approximately $1,476,000 and $1,357,000 in 2021 and 2020, respectively.

Leases

The Company accounts for leases in accordance with FASB's ASU 2016-02, "Leases (Topic 842)." 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 right-of-use ("ROU") assets and operating lease liabilities represent primarily leases for office and warehouse spaces used to conduct our business. These leases have remaining terms of approximately two to eight years which include additional options to renew. The Company includes renewal options in valuing its ROU assets and liabilities when it determines that it is reasonably certain to exercise these renewal options. 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 under ASU 2016-02. Lease expense for operating leases is recognized on a straight-line basis over the lease term.

Finance leases primarily consist of processing and transport equipment used by our facilities' operations. The Company's finance leases also included a building with land utilized for our waste treatment operations which included a purchase option. During the third quarter of 2021, the Company concluded that it was more likely than not that it would not exercise this purchase option but will continue to lease the property. Accordingly, a reassessment of this lease was performed which resulted in reclassification of this lease to an operating lease. The Company's finance leases have remaining terms of approximately one to four years and some of the leases include options to purchase the underlying assets at fair market value at the conclusion of the lease term. See "Property and Equipment" above for assets recorded under financed leases. Borrowing rates for our finance leases are either explicitly stated in the lease agreements or implicitly determined from available terms in the lease agreements.

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

Intangible Assets

Intangible assets consist primarily of the recognized value of the permits required to operate our business. Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of October 1, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, a quantitative test is performed to determine the fair value. The impairment loss, if any, is measured as the excess of the carrying value of the asset over its fair value. Judgments and estimates are inherent in these analyses and include assumptions for, among other factors, forecasted revenue, gross margin, growth rate, operating income, timing of expected future cash flows, and the determination of appropriate long-term discount rates. Impairment testing of our indefinite-lived permits related to our Treatment reporting unit as of October 1, 2021 and 2020 resulted in no impairment charges.

Intangible assets that have definite useful lives are amortized using the straight-line method over the estimated useful lives (with the exception of customer relationships which are amortized using an accelerated method) and are excluded from our annual intangible asset valuation review as of October 1. Definite-lived intangible assets are also tested for impairment whenever events or changes in circumstances suggest impairment might exist.

R&D

Operational innovation and technical know-how are very important to the success of our business. Our goal is to discover, develop, and bring to market innovative ways to process waste that address unmet environmental needs and to develop new company service offerings. The Company conducts research internally and also through collaborations with other third parties. R&D costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development and enhancement of new potential waste treatment processes and new technology and are charged to expense when incurred in accordance with ASC Topic 730, "Research and Development."

Accrued Closure Costs and ARO

Accrued closure costs represent our estimated environmental liability to clean up our facilities, as required by our permits, in the event of closure. ASC 410, "Asset Retirement and Environmental Obligations" requires that the discounted fair value of a liability for an ARO be recognized in the period in which it is incurred with the associated ARO capitalized as part of the carrying cost of the asset. The recognition of an ARO requires that management make numerous estimates, assumptions and judgments regarding such factors as estimated probabilities, timing of settlements, material and service costs, current technology, laws and regulations, and credit adjusted risk-free rate to be used. This estimate is inflated, using an inflation

rate, to the expected time at which the closure will occur, and then discounted back, using a credit adjusted risk free rate, to the present value. ARO's are included within buildings as part of property and equipment and are depreciated over the estimated useful life of the property. In periods subsequent to initial measurement of the ARO, the Company must recognize period-to-period changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows. Increases in the ARO liability due to passage of time impact net income as accretion expense, which is included in cost of goods sold. Changes in costs resulting from changes or expansion at the facilities require adjustment to the ARO liability and are capitalized and charged as depreciation expense, in accordance with the Company's depreciation policy.

Income Taxes

Income taxes are accounted for in accordance with ASC 740, "Income Taxes." Under ASC 740, the provision for income taxes is comprised of taxes that are currently payable and deferred taxes that relate to the temporary differences between financial reporting carrying values and tax bases of assets and liabilities. Deferred tax assets and liabilities are measured using enacted income tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Any effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

ASC 740 requires that deferred income tax assets be reduced by a valuation allowance if it is more likely than not that some portion or all of the deferred income tax assets will not be realized. The Company regularly assesses the likelihood that the deferred tax asset will be recovered from future taxable income. The Company considers projected future taxable income and ongoing tax planning strategies, then records a valuation allowance to reduce the carrying value of the net deferred income taxes to an amount that is more likely than not to be realized. (See "Note 13 – Income Taxes" for a discussion of the release of valuation allowance on deferred tax assets made by the Company in the third quarter of 2021).

ASC 740 sets out a consistent framework for preparers to use to determine the appropriate recognition and measurement of uncertain tax positions. ASC 740 uses a two-step approach wherein a tax benefit is recognized if a position is more-likely-than-not to be sustained. The amount of the benefit is then measured to be the highest tax benefit which is greater than 50% likely to be realized. ASC 740 also sets out disclosure requirements to enhance transparency of an entity's tax reserves. The Company recognizes accrued interest and income tax penalties related to unrecognized tax benefits as a component of income tax expense.

The Company reassesses the validity of our conclusions regarding uncertain income tax positions on a quarterly basis to determine if facts or circumstances have arisen that might cause us to change our judgment regarding the likelihood of a tax position's sustainability under audit.

Foreign Currency

The Company's foreign subsidiaries include PF UK Limited and PF Canada and also included PF Medical. Assets and liabilities are translated to U.S. dollars at the exchange rate in effect at the balance sheet date and revenue and expenses at the average exchange rate for the period. Foreign currency translation adjustments for these subsidiaries are accumulated as a separate component of accumulated other comprehensive income (loss) in stockholders' equity. Gains and losses resulting from foreign currency transactions are recognized in the Consolidated Statements of Operations.

Concentration Risk

The Company performed services relating to waste generated by government clients (domestic and foreign (primarily Canadian)), either indirectly for others as a subcontractor to government entities or directly as a prime contractor, representing approximately $60,812,000, or 84.2%, of our total revenue during 2021, as compared to $96,582,000, or 91.6%, of our total revenue during 2020.

Revenue generated by the Company as a subcontractor to a customer for a remediation project performed for a government entity (the DOE) within our Services Segment in 2021 and 2020 accounted for approximately $8,526,000 or 11.8% and $41,011,000 or 38.9% (included in revenues generated relating to

government clients above) of the Company’s total revenue for 2021 and 2020, respectively. This remediation project included among other things, decontamination support of a building. This project was completed in the second quarter of 2021.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, the Company does not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash and accounts receivable. The Company maintains cash with high quality financial institutions, which may exceed Federal Deposit Insurance Corporation (“FDIC”) insured amounts from time to time. Concentration of credit risk with respect to accounts receivable is limited due to the Company's large number of customers and their dispersion throughout the United States as well as with the significant amount of work that we perform for government entities.

The Company had two government related customers whose total unbilled and net outstanding receivable balances represented 18.2% and 23.5% of the Company’s total consolidated unbilled and net accounts receivable at December 31, 2021. The Company had three government related customers whose total unbilled and net outstanding receivable balances represented 41.1%, 19.0% and 12.5% of the Company’s total consolidated unbilled and net accounts receivable at December 31, 2020.

Revenue Recognition and Related Policies
The Company recognizes revenue in accordance with FASB’s ASC 606, “Revenue from Contracts with Customers.” ASC 606 provides a single, comprehensive revenue recognition model for all contracts with customers. Under ASC 606, a five-step process is utilized in order to determine revenue recognition, depicting the transfer of goods or services to a customer at an amount that reflects the consideration it expects to receive in exchange for those goods or services. Under ASC 606, a performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account. A contract transaction price is allocated to each distinct performance obligation and recognized as revenues as the performance obligation is satisfied.

Treatment Segment Revenues:
Contracts in our Treatment Segment primarily have a single performance obligation as the promise to receive, treat and dispose of waste is not separately identifiable in the contract and, therefore, not distinct. Performance obligations are generally satisfied over time using the input method. Under the input method, the Company uses a measure of progress divided into major phases which include receipt (ranging from 9.0% to 33%), treatment/processing (ranging from 15% to 79%) and shipment/final disposal (ranging from 9.0% to 52%). As major processing phases are completed and the costs are incurred, the proportional percentage of revenue is recognized. Transaction price for Treatment Segment contracts are determined by the stated fixed rate per unit price as stipulated in the contract.

Services Segment Revenues:
Revenues for our Services Segment are generated from time and materials or fixed price arrangements:

The Company’s primary obligation to customers in time and materials contracts relate to the provision of services to the customer at the direction of the customer. This provision of services at the request of the customer is the performance obligation, which is satisfied over time. Revenue earned from time and materials contracts is determined using the input method and is based on contractually defined billing rates applied to services performed and materials delivered.

Under fixed price contracts, the objective of the project is not attained unless all scope items within the contract are completed and all of the services promised within fixed fee contracts constitute a single performance obligation. Transaction price is estimated based upon the estimated cost to complete the overall project. Revenue from fixed price contracts is recognized over time primarily using the input method. For

the input method, revenue is recognized based on costs incurred on the project relative to the total estimated costs of the project.

The majority of our contracts with our customers are short term with an original expected length of one year or less. The Company's contracts and subcontracts relating to activities at governmental sites (both U.S. and Canadian) generally allow for termination for convenience at any time at the government's option without payment of a substantial penalty.

Variable Consideration
The Company's contracts generally do not give rise to variable consideration. However, during the third quarter of 2021, the Company recognized approximately $1,286,000 in revenue from a REA under one of the Company's Treatment Services contracts that resulted in cumulative catch-up adjustment in the transaction price that had been constrained in prior periods.

Significant Payment Terms
Invoicing is based on schedules established in customer contracts. Payment terms vary by customers but are generally established at 30 days from invoicing.

Incremental Costs to Obtain a Contract
Costs incurred to obtain contracts with our customers are immaterial and as a result, the Company expenses (within selling, general and administration expenses ("SG&A")) incremental costs incurred in obtaining contracts with our customer as incurred.

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

Within our Services Segment, there are service contracts which provide that the Company has a right to consideration from a customer in an amount that corresponds directly with the value to the customer of our performance completed to date. For those contracts, the Company has utilized the practical expedient in ASC 606-10-55-18, which allows the Company to recognize revenue in the amount for which we have the right to invoice; accordingly, the Company does not disclose the value of remaining performance obligations for those contracts.

The Company's contracts and subcontracts relating to activities at governmental sites generally allow for termination for convenience at any time at the government's option without payment of a substantial penalty. The Company does not disclose remaining performance obligations on these contracts.

Stock-Based Compensation
Stock-based compensation granted to employees are accounted for in accordance with ASC 718, "Compensation – Stock Compensation." Stock-based payment transactions for acquiring goods and services from nonemployees are also accounted for under ASC 718. ASC 718 requires stock-based payments to employees and nonemployees, including grant of options, to be recognized in the Statement of Operations based on their fair values. The Company uses the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. Assumptions used to estimate the fair value of stock-based awards include the exercise price of the award, the expected term, the expected volatility of our stock over the stock-based award's expected term, the risk-free interest rate over the award's expected term, and the expected annual dividend yield. The Company accounts for forfeitures when they occur.

Comprehensive Income (Loss)
The components of comprehensive income (loss) are net income (loss) and the effects of foreign currency translation adjustments.

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. Income (loss) per share is computed separately for each period presented.

Fair Value of Financial Instruments

Certain assets and liabilities are required to be recorded at fair value on a recurring basis, while other assets and liabilities are recorded at fair value on a nonrecurring basis. Fair value is determined based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. The three-tier value hierarchy, which prioritizes the inputs used in the valuation methodologies, is:

Level 1—Valuations based on quoted prices for identical assets and liabilities in active markets.

Level 2—Valuations based on observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

Level 3—Valuations based on unobservable inputs reflecting the Company's own assumptions, consistent with reasonably available assumptions made by other market participants.

Financial instruments include cash (Level 1), accounts receivable, accounts payable, and debt obligations (Level 3). Credit is extended to customers based on an evaluation of a customer's financial condition and, generally, collateral is not required. At December 31, 2021 and December 31, 2020, the fair value of the Company's financial instruments approximated their carrying values. The fair value of the Company's revolving credit and term loan approximate its carrying value due to the variable interest rate.

Recently Adopted Accounting Standards

In December 2019, the FASB issued ASU No. 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes," which is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020, with early adoption permitted. The adoption of ASU No. 2019-12 by the Company effective January 1, 2021 did not have a material impact on the Company's financial statements.

In January 2020, the FASB issued ASU 2020-01, "Investments - Equity Securities (Topic 321), Investments - Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815), clarifying the Interactions between Topic 321, Topic 323, and Topic 815." This guidance addresses accounting for the transition into and out of the equity method and provides clarification of the interaction of rules for equity securities, the equity method of accounting, and forward contracts and purchase options on certain types of securities. This standard is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2020. Early adoption is permitted. The adoption of ASU No. 2020-01 by the Company effective January 1, 2021 did not have a material impact on the Company's financial statements.

In October 2020, the FASB issued ASU No 2020-10, "Codification Improvements." ASU 2020-10 updates various codification topics by clarifying or improving disclosure requirements. ASU 2020-10 is effective for public entities for fiscal years beginning after December 15, 2020, with early adoption permitted. The adoption of ASU No. 2020-01 by the Company effective January 1, 2021 did not have a material impact on the Company's financial statements or disclosures.

Recently Issued Accounting Standards – Not Yet Adopted

In June 2016, the FASB issued ASU No. 2016-13, "Credit Losses (Topic 326) - Measurement of Credit Losses on Financial Instruments," and various subsequent amendments to the initial guidance (collectively, "Topic 326"). Topic 326 introduces an approach, based on expected losses, to estimate credit losses on certain types of financial instruments and modifies the impairment model for available-for-sale debt securities. The new approach to estimating credit losses (referred to as the current expected credit losses

model) applies to most financial assets measured at amortized cost and certain other instruments, including trade and other receivables and loans. 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. In November 2019, FASB issued ASU 2019-10, "Financial Instruments – Credit Losses (Topic 326), Derivatives and Hedging (Topic 815), and Leases (Topic 842)," which defers the effective date of ASU 2016-13 for public companies that are considered smaller reporting companies ("SRC") as defined by the Commission to fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. These ASUs are effective January 1, 2023 for the Company as an SRC. Under new guidance issued by the Commission in March 2020, the Company continues to qualify as a smaller reporting company but has become an accelerated filer for all filings with the Commission starting with this Form 10-K filing and all subsequent filings. The Company is currently evaluating the impact of these ASU on its consolidated financial statements.

In August 2020, the FASB issued ASU No. 2020-06, "Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity." ASU 2020-06 simplifies the accounting for convertible instruments by removing major separation models and removing certain settlement condition qualifiers for the derivatives scope exception for contracts in an entity's own equity, and simplifies the related diluted net income per share calculation for both Subtopics. ASU 2020-06 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2023, for the Company as an SRC. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. The Company is currently evaluating the impact of this ASU on its consolidated financial statements and disclosures.

In May 2021, the FASB issued ASU No. 2021-04, "Earnings Per Share (Topic 206), Debt-Modifications and Extinguishments (Subtopic 470-50), Compensation-Stock Compensation (Topic 718), and Derivatives and Hedging-Contracts in Entity's Own Equity (Subtopic 815-40): Issuer's Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options (a consensus of the FASB Emerging Issues Task Force)." ASU 2021-04 addresses issuer's accounting for certain modifications or exchanges of freestanding equity-classified written call options. This ASU is effective for all entities, for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. Early adoption is permitted. This ASU is effective January 1, 2022 for the Company. The Company does not expect the adoption of this ASU will have a material impact on its financial statements.

NOTE 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 following tables present further disaggregation of our revenues by different categories for our Services and Treatment Segments:

Revenue by Contract Type (In thousands)	Twelve Months Ended December 31, 2021			Twelve Months Ended December 31, 2020		
	Treatment	Services	Total	Treatment	Services	Total
Fixed price	$ 32,992	$ 11,236	$ 44,228	$ 30,143	$ 8,970	$ 39,113
Time and materials	—	27,963	27,963	—	66,313	66,313
Total	$ 32,992	$ 39,199	$ 72,191	$ 30,143	$ 75,283	$ 105,426

Revenue by generator (In thousands)	Twelve Months Ended December 31, 2021			Twelve Months Ended December 31, 2020		
	Treatment	Services	Total	Treatment	Services	Total
Domestic government	$ 22,538	$ 29,013	$ 51,551	$ 22,795	$ 68,237	$ 91,032
Domestic commercial	9,294	1,412	10,706	6,933	1,825	8,758
Foreign government	577	8,684	9,261	415	5,135	5,550
Foreign commercial	583	90	673	—	86	86
Total	$ 32,992	$ 39,199	$ 72,191	$ 30,143	$ 75,283	$ 105,426

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)	December 31, 2021	December 31, 2020	Year-to-date Change ($)	Year-to-date Change (%)
Contract assets				
Account receivables, net of allowance	$ 11,372	$ 9,659	$ 1,713	17.7 %
Unbilled receivables - current	8,995	14,453	(5,458)	(37.8) %
Contract liabilities				
Deferred revenue	$ 5,580	$ 4,614	$ 966	20.9 %

The decrease in unbilled receivables was primarily within our Services Segment due to invoicing and collection of accounts receivable on certain large projects which have been completed or are near completion.

During the twelve months ended December 31, 2021 and 2020, the Company recognized revenue of $7,196,000 and $8,094,000, respectively, related to untreated waste that was in the Company's control as of the beginning of each respective year. Revenue recognized in each period related to performance obligations satisfied within the respective period.

NOTE 4
LEASES

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

	Twelve Months Ended December 31, 2021	Twelve Months Ended December 31, 2020
Operating Leases:		
Lease cost	$ 499	$ 456
Finance Leases:		
Amortization of ROU assets	220	220
Interest on lease liability	97	143
	317	363
Short-term lease rent expense	13	15
Total lease cost	$ 829	$ 834

The weighted average remaining lease term and the weighted average discount rate for operating and finance leases at December 31, 2021 were:

	Operating Leases	Finance Leases
Weighted average remaining lease terms (years)	6.9	4.0
Weighted average discount rate	7.6%	6.2%

The weighted average remaining lease term and the weighted average discount rate for operating and finance leases at December 31, 2020 was:

	Operating Leases	Finance Leases
Weighted average remaining lease terms (years)	8.0	3.5
Weighted average discount rate	8.0%	7.3%

The following table reconciles the undiscounted cash flows for the operating and finance leases at December 31, 2021 to the operating and finance lease liabilities recorded on the balance sheet (in thousands):

		Operating Leases		Finance Leases
2022	$	576	$	398
2023		560		314
2024		419		310
2025		327		299
2026		305		82
2027 and thereafter		955		-
Total undiscounted lease payments		3,142		1,403
Less: Imputed interest		(707)		(186)
Present value of lease payments	$	2,435	$	1,217
Current portion of operating lease obligations	$	406	$	—
Long-term operating lease obligations, less current portion	$	2,029	$	—
Current portion of finance lease obligations	$	—	$	333
Long-term finance lease obligations, less current portion	$	—	$	884

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

	Twelve Months Ended December 31,			
		2021		2020
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flow from operating leases	$	439	$	442
Operating cash flow from finance leases	$	97	$	143
Financing cash flow from finance leases	$	334	$	615
ROU assets obtained in exchange for lease obligations for:				
Finance liabilities	$	577	$	874
Operating liabilities	$	491	$	—
Reduction to ROU assets resulitng from reassessment for				
Finance liabilities	$	(364)	$	—

NOTE 5
PERMIT AND OTHER INTANGIBLE ASSETS

The following table summarizes changes in the carrying value of permits. No permit exists at our Services and Medical Segments.

Permit (amount in thousands)		Treatment
Balance as of December 31, 2019	$	8,790
Permit in progress		132
Balance as of December 31, 2020	$	8,922
Permit renewal	$	121
Permit in progress		433
Balance as of December 31, 2021	$	9,476

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

		December 31, 2021			December 31, 2020		
Other Intangibles (amount in thousands)	Weighted Average Amortization Period (Years)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patent	8.3	$ 787	$ (351)	$ 436	$ 742	$ (334)	$ 408
Software	3	592	(415)	177	418	(411)	7
Customer relationships	10	3,370	(3,089)	281	3,370	(2,910)	460
Total		$ 4,749	$ (3,855)	$ 894	$ 4,530	$ (3,655)	$ 875

The intangible assets noted above were amortized on a straight-line basis over their useful lives with the exception of customer relationships which were amortized using an accelerated method.

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

Year	Amount (In thousands)
2022	$ 233
2023	192
2024	61
2025	14
2026	11

Amortization expense recorded for definite-lived intangible assets was approximately $211,000 and $239,000, for the years ended December 31, 2021 and 2020, respectively.

NOTE 6
CAPITAL STOCK, STOCK PLANS, WARRANTS AND STOCK BASED COMPENSATION

Stock Option Plans

The Company's 2003 Outside Directors Stock Plan (the "2003 Plan") provides for the grant of Non-Qualified Stock Options ("NQSOs") to member of the Company's Board who is not an employee of the Company or its subsidiaries ("Eligible Director"). On July 20, 2021, the Company's stockholders approved an amendment (the "Amendment") to the 2003 Plan which provided the following, among other things: i) authorizes an additional 500,000 shares of the Company's common stock, par value $0.001 per share (the "Common Stock") for issuance under the 2003 Plan, (ii) increases (a) the number of shares of Common Stock subject to the automatic option grant made to each Eligible Director upon initial election, from 6,000 to 20,000 shares, and (b) the number of shares of Common Stock subject to the automatic option grant made to each Eligible Director upon reelection, from 2,400 to 10,000 shares, (iii) amends the vesting period of options granted under the 2003 Plan, from a six-month vesting period to 25% per year, beginning on the first anniversary date of the grant, and (iv) provides for acceleration of vesting under certain conditions. The exercise price of options to be granted under the 2003 Plan continues to equal to the closing trade price on the date prior to the grant date. The 2003 Plan continues to provide for the issuance to each Eligible Director a number of shares of the Company's Common Stock in lieu of 65% or 100% (based on option elected by each director) of the fee payable to the Eligible Director for services rendered as a member of the

Board. The number of shares issued is determined at 75% of the market value as defined in the 2003 Plan (the Company recognizes 100% of the market value of the shares issued). The number of shares of the Company's Common Stock authorized under the 2003 Plan is 1,600,000. At December 31, 2021, the 2003 Plan had available for issuance 599,854 shares.

The Company's 2017 Stock Option Plan ("2017 Plan") authorizes the grant of options to officers and employees of the Company, including any employee who is also a member of the Board, as well as to consultants of the Company. The 2017 Plan, as amended, authorizes an aggregate grant of 1,140,000 NQSOs and Incentive Stock Options ("ISOs"). Consultants of the Company can only be granted NQSOs. The term of each stock option granted under the 2017 Plan shall be fixed by the Compensation Committee, but no stock options will be exercisable more than ten years after the grant date, or in the case of an ISO granted to a 10% stockholder, five years after the grant date. The exercise price of any ISO granted under the 2017 Plan to an individual who is not a 10% stockholder at the time of the grant shall not be less than the fair market value of the shares at the time of the grant, and the exercise price of any ISO granted to a 10% stockholder shall not be less than 110% of the fair market value at the time of grant. The exercise price of any NQSOs granted under the plan shall not be less than the fair market value of the shares at the time of grant. At December 31, 2021, the 2017 Plan had available for issuance 344,000 shares.

The Company's 2010 Stock Option Plan ("2010 Plan") expired on September 29, 2020; however, an option (ISO) issued under the 2010 Plan prior to the expiration of the 2010 Plan for the purchase of up to 50,000 shares of our Common Stock at $3.97 per share remains in effect until the earlier of the exercise date by the optionee or the maturity date of May 15, 2022.

Stock Options to Employees and Outside Director

On October 14, 2021, the Company granted ISOs to certain employees for the purchase, under the Company's 2017 Plan, of up to an aggregate 305,000 shares of the Company's Common Stock. The total ISOs granted included an ISO for each of the Company's executive officers for the purchase set forth in his respective ISO Agreement, as follows: 50,000 shares for the CEO; 25,000 shares for the CFO; 20,000 shares for the EVP of Strategic Initiatives; 25,000 shares for the EVP of Waste Treatment Operations; and 25,000 shares for the EVP of Nuclear and Technical Services. Each of the ISOs granted has a contractual term of six years with one-fifth yearly vesting over a five-year period. The exercise price of the ISO is $7.005 per share, which was equal to the fair market value of the Company's Common Stock on the date of grant.

On July 20, 2021, the Company issued a NQSO to each of the Company's seven reelected outside directors for the purchase, under the Company's 2003 Plan, of up to 10,000 shares of the Company's Common Stock. Each NQSO granted has for a contractual term of ten years with one-fourth vesting annually over a four-year period. The exercise price of the NQSO is $5.93 per share, which was equal to the fair market value of the Company's Common Stock the day preceding the grant date, pursuant to the 2003 Plan.

On May 4, 2021, the Company issued a NQSO to a new director elected by the Company's Board, for the purchase, under the Company's 2003 Plan, of up to 6,000 shares of the Company's Common Stock. The NQSO granted has a contractual term of ten years with a vesting period of six months. The exercise price of the NQSO is $7.50 per share, which was equal to the fair market value of the Company's Common Stock the day preceding the grant date, pursuant to the 2003 Plan.

On August 10, 2020, the Company issued a NQSO from the Company's 2003 Plan to a new director elected by the Company's Board to fill a vacancy on the Board, for the purchase of up to 6,000 shares of the Company's Common Stock. The NQSO granted has for a contractual term of ten years with a vesting period of six months. The exercise price of the NQSO is $7.29 per share, which was equal to the Company's closing stock price per share the day preceding the grant date, pursuant to the 2003 Plan.

On July 22, 2020, the Company issued a NQSO to each of the Company's five reelected outside directors for the purchase, under the Company's 2003 Plan, of up to 2,400 shares of the Company's Common Stock. Each NQSO granted has a contractual term of ten years with a vesting period of six months. The exercise

price of the NQSO is $6.70 per share, which was equal to our closing stock price the day preceding the grant date, pursuant to the 2003 Plan.

On February 4, 2020, the Company issued a NQSO from the Company's 2003 Plan to a new director elected by the Company's Board to fill a vacancy on the Board, for the purchase of up to 6,000 shares of the Company's Common Stock. The NQSO granted has a contractual term of ten years with a vesting period of six months. The exercise price of the options is $7.00 per share, which was equal to the Company's closing stock price per share the day preceding the grant date, pursuant to the 2003 Plan.

During 2021, the Company issued 290 shares of its Common Stock from a cashless exercise of an option for the purchase of 500 shares of the Company's Common Stock at $3.15 per share. During 2020, the Company issued 2,000 shares of its Common Stock resulting from the exercise of options from the Company's 2017 Plan for total proceeds of $6,300. Additionally, the Company issued 1,884 shares of its Common Stock from cashless exercises of 8,000 and 2,500 options at $3.60 per share and $3.15 per share, respectively.

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 during 2020 and 2019 and the related assumptions used in the Black-Scholes option model used to value the options granted were as follows. No options were granted to employees in 2020:

	Employee Stock Option Granted
	2021
Weighted-average fair value per share	$ 3.51
Risk -free interest rate [1]	1.05%
Expected volatility of stock [2]	58.61%
Dividend yield	None
Expected option life [3]	5.0 years

	Outside Director Stock Options Granted	
	2021	2020
Weighted-average fair value per share	$ 3.9	$ 4.66
Risk -free interest rate [1]	1.23%-1.61%	0.59%-1.61%
Expected volatility of stock [2]	55.84%-55.91%	55.83%-56.68%
Dividend yield	None	None
Expected option life [3]	10.0 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 fiscal years 2021 and 2020.

	Year Ended	
	2021	2020
Employee Stock Options	$ 178,000	$ 132,000
Director Stock Options	72,000	104,000
Total	$ 250,000	$ 236,000

At December 31, 2021, the Company has approximately $1,389,000 of total unrecognized compensation costs related to unvested options for employee and directors. The weighted average period over which the

unrecognized compensation costs are expected to be recognized is approximately 4.3 years.

Stock Options to Consultant

The Company granted a NQSO to Robert Ferguson on July 27, 2017 from the Company's 2017 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 PFNWR facility at an exercise price of $3.65 per share, which was the fair market value of the Company's Common Stock on the date of grant. The term of the Ferguson Stock Option is seven years from the grant date. The vesting of the Ferguson Stock Option is subject to the achievement of three separate milestones by certain dates. The first milestone was met and the shares under the first milestone were issued to Robert Ferguson in May 2018. The Company had previously entered into amendments whereby the vesting dates for the second and third milestones for the purchase of up to 30,000 and 60,000 shares of the Company's Common Stock were extended to December 31, 2021 and December 31, 2022, respectively. On January 20, 2022, the Company's Compensation Committee and the Board further amended the vesting dates of the second and third milestones to December 31, 2022 and December 31, 2023, respectively. This amendment was approved by the Compensation Committee and the Board to take effect December 31, 2021. The Company has not recognized compensation costs (fair value of approximately $289,000 at December 31, 2021) for the remaining 90,000 Ferguson Stock Option under the remaining two milestones since achievement of the performance obligation under each of the two remaining milestones is uncertain at December 31, 2021. All other terms of the Ferguson Stock Option remain unchanged.

Summary of Stock Option Plans

The summary of the Company's total plans as of December 31, 2021 and 2020, and changes during the period then ended are presented as follows:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value [4]
Options outstanding January 1, 2021	658,400	$ 3.87		
Granted	381,000	$ 6.82		
Exercised	(500)	$ 3.15		$ 2,175
Forfeited/expired	(19,500)	$ 6.75		
Options outstanding end of period [1]	1,019,400	$ 4.91	4.0	$ 1,669,687
Options exercisable at December 31, 2021[1]	438,400	$ 3.95	2.7	$ 1,064,432

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value [4]
Options outstanding January 1, 2020	681,300	$ 3.84		
Granted	24,000	$ 6.92		
Exercised	(12,500)	$ 3.47		$ 16,060
Forfeited/expired	(34,400)	$ 5.52		
Options outstanding end of period [2]	658,400	$ 3.87	3.5	$ 1,426,143
Options exercisable at December 31, 2020[3]	356,400	$ 3.99	3.3	$ 732,163

[1] Options with exercise prices ranging from $2.79 to $7.50

[2] Options with exercise prices ranging from $2.79 to $7.29

[3] Options with exercise prices ranging from $2.79 to $7.05

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

The summary of the Company's nonvested options as of December 31, 2021 and changes during the period then ended are presented as follows:

	Shares	Weighted Average Grant-Date Fair Value
Non-vested options January 1, 2021	302,000	$ 1.94
Granted	381,000	3.59
Vested	(100,500)	2.44
Forfeited	(1,500)	1.42
Non-vested options at December 31, 2021	581,000	$ 3.13

Warrant

In connection with a $2,500,000 loan that the Company executed April 1, 2019 with Mr. Robert Ferguson, the Company issued a Warrant to Mr. Ferguson for the purchase of up to 60,000 shares of our Common Stock at an exercise price of $3.51 per share. The Warrant is exercisable six months from April 1, 2019 and expires on April 1, 2024 and remains outstanding at December 31, 2021. The loan was paid-in-full by the Company in December 2020.

Common Stock Issued for Services

The Company issued a total of 60,723 and 34,135 shares of our Common Stock in 2021 and 2020, respectively, under our 2003 Plan to our outside directors as compensation for serving on our Board. As a member of the Board, each director elects to receive either 65% or 100% of the director's fee in shares of our Common Stock. The number of shares received is calculated based on 75% of the fair market value of our Common Stock determined on the business day immediately preceding the date that the quarterly fee is due. The balance of each director's fee, if any, is payable in cash. The Company recorded approximately $467,000 and $250,000 in compensation expense (included in SG&A expenses) for the twelve months ended December 31, 2021 and 2020, respectively, for the portion of director fees earned in the Company's Common Stock.

Sale of Common Stock

On September 30, 2021, the Company entered into subscription agreements with certain institutional and retail investors in a registered direct offering, for the sale and issuance of 1,000,000 shares of the Company's Common Stock (See "Note 7 – Common Stock Subscription Agreement" for a discussion of the issuance of the shares from this direct offering).

Shares Reserved

At December 31, 2021, the Company has reserved approximately 1,019,400 shares of our Common Stock for future issuance under all of the option arrangements.

NOTE 7
COMMON STOCK SUBSCRIPTION AGREEMENT

On September 30, 2021, the Company entered into subscription agreements (the "Subscription Agreements") with certain institutional and retail investors (the "Purchasers"), pursuant to which the Company agreed to sell and issue, in a registered direct offering, an aggregate of 1,000,000 shares (the "Shares") of our Common Stock, at a negotiated purchase price per share of $6.20 (the "Shares"), for aggregate gross proceeds to us of approximately $6,200,000. The offering price per share was negotiated based on the average closing price of our Common Stock as quoted on Nasdaq over the three-week period immediately preceding the date of the Subscription Agreements, less a five percent discount.

The Shares were offered and sold by the Company through a prospectus supplement pursuant to the Company's "shelf" registration statement on Form S-3, which was previously filed with the Commission on May 13, 2019 and subsequently declared effective on May 22, 2019 (the "Registration Statement").

Wellington Shields & Co., LLC ("Wellington") served as the exclusive placement agent in connection with the Offering, pursuant to a placement agency agreement dated as of September 23, 2021 (the "Placement Agency Agreement"), between the Company and Wellington. The Company paid Wellington a cash fee of

6.00% of the aggregate gross proceeds in the Offering which totaled $372,000. The Company also reimbursed Wellington for certain expenses in connection with the Offering in an aggregate amount not to exceed $50,000. After deducting costs incurred directly in connection with the offering which were recorded as deduction to equity, net proceeds to the Company totaled approximately $5,704,000. As of December 31, 2021, approximately $435,000 of the $496,000 in incurred offering costs were paid.

The Company plans to use the aggregate net proceeds from the offering primarily for working capital and general corporate purposes, including for certain facility expansion and upgrades, with the use of such proceeds subject to changes, based on the judgment of management.

NOTE 8
INCOME (LOSS) PER SHARE

The following table reconciles the income (loss) and average share amounts used to compute both basic and diluted income per share:

(Amounts in Thousands, Except for Per Share Amounts)	Years Ended December 31, 2021	2020
Net income attributable to Perma-Fix Environmental Services, Inc., common stockholders:		
Income from continuing operations, net of taxes	$ 1,092	$ 3,149
Net loss attributable to non-controlling interest	(164)	(123)
Income from continuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ 1,256	$ 3,272
Loss from discontinuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders	(421)	(412)
Net income attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ 835	$ 2,860
Basic income per share attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ .07	$ .24
Diluted income per share attributable to Perma-Fix Environmental Services, Inc. common stockholders	$ .07	$ .23
Weighted average shares outstanding:		
Basic weighted average shares outstanding	12,433	12,139
Add: dilutive effect of stock options	211	184
Add: dilutive effect of warrants	29	24
Diluted weighted average shares outstanding	12,673	12,347
Potential shares excluded from above weighted average share calculations due to their anti-dilutive effect include:		
Stock options	323	42
Warrant	—	—

NOTE 9
DISCONTINUED OPERATIONS

The Company's discontinued operations consist of all our subsidiaries included in our Industrial Segment which encompasses subsidiaries divested in 2011 and prior and three previously closed locations.

The Company incurred losses from discontinued operations of $421,000 (net of tax benefit of $139,000) and $412,000 (net of taxes of $0) for the years ended December 31, 2021 and 2020, respectively. The loss for the year ended 2021 included an increase of approximately $100,000 in remediation reserve for our PFSG subsidiary due to reassessment of the remediation reserve. The remaining loss for each of the periods noted above was primarily due to costs incurred in the administration and continued monitoring of our

discontinued operations.

The following table presents the major class of assets of discontinued operations at December 31, 2021 and December 31, 2020. No assets and liabilities were held for sale at each of the periods noted.

(Amounts in Thousands)		December 31, 2021		December 31, 2020
Current assets				
Other assets	$	15	$	22
Total current assets		15		22
Long-term assets				
Property, plant and equipment, net [(1)]		81		81
Total long-term assets		81		81
Total assets	$	96	$	103
Current liabilities				
Accounts payable	$	3	$	4
Accrued expenses and other liabilities		154		150
Environmental liabilities		349		744
Total current liabilities		506		898
Long-term liabilities				
Closure liabilities		150		142
Environmental liabilities		527		110
Total long-term liabilities		677		252
Total liabilities	$	1,183	$	1,150

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

Environmental Liabilities

The Company has three remediation projects, which are currently in progress relating to our PFD, PFM and PFSG (closed locations) subsidiaries, all within our discontinued operations. The Company divested PFD in 2008; however, the environmental liability of PFD was retained by the Company upon the divestiture of PFD. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. The remediation activities are closely reviewed and monitored by the applicable state regulators.

At December 31, 2021, the Company had total accrued environmental remediation liabilities of $876,000, an increase of $22,000 from the December 31, 2020 balance of $854,000. The net increase represents an increase of $100,000 made to the reserve at our PFSG subsidiary as discussed above and payments of approximately $78,000 for remediation projects for the three subsidiaries. At December 31, 2021, $349,000 of the total accrued environmental liabilities was recorded as current.

The current and long-term accrued environmental liabilities at December 31, 2021 are summarized as follows (in thousands).

		Current Accrual		Long-term Accrual		Total
PFD	$	8	$	60	$	68
PFM		—		15		15
PFSG		341		452		793
Total liability	$	349	$	527	$	876

NOTE 10
LONG-TERM DEBT

Long-term debt consists of the following at December 31, 2021 and December 31, 2020:

(Amounts in Thousands)	December 31, 2021		December 31, 2020	
Revolving Credit facility dated May 8, 2020, borrowings based upon eligible accounts receivable, subject to monthly borrowing base calculation, balance due on May 15, 2024. Effective interest rate for 2021 and 2020 was 5.3% and 6.1%. [1]	$ —		$ —	
Term Loan dated May 8, 2020, payable in equal monthly installments of principal, balance due on May 15, 2024. Effective interest rate for 2021 and 2020 was 4.5% and 5.2%. [1]	954	[2]	1,388	[2]
Promissory Note dated April 14, 2020, balance of loan forgiven. Interest accrued at annual rate of 1.0%. [3]	—	[4]	5,318	[4]
Notes Payable to 2023 and 2025, annual interest rate of 5.6% and 9.1%.	39		23	
Total debt	993		6,729	
Less current portion of long-term debt	393		3,595	
Long-term debt	$ 600		$ 3,134	

[1] Our revolving credit facility is collateralized by our accounts receivable and our term loan is collateralized by our property, plant, and equipment.

[2] Net of debt issuance/debt discount costs of ($112,000) and ($105,000) at December 31, 2021 and December 31, 2020, respectively.

[3] Uncollateralized note.

[4] Entered into with the Company's credit facility lender under the PPP under the CARES Act (see "PPP Loan" below for information regarding forgiveness on the entire loan balance, along with accrued interest, effective June 15, 2021).

Revolving Credit and Term Loan Agreement

The Company entered into a Second Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated May 8, 2020 ("Loan Agreement"), with PNC National Association ("PNC"), acting as agent and lender. The Loan Agreement provides the Company with the following credit facility with a maturity date of March 15, 2024: (a) up to $18,000,000 revolving credit ("revolving credit") and (b) a term loan ("term loan") of approximately $1,742,000, requiring monthly installments of $35,547. The maximum that the Company 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 May 4, 2021, the Company entered into an amendment to the Loan Agreement with its lender which provided the following, among other things:

- revised the Company's FCCR calculation requirement which allows for the add-back of approximately $5,318,000 in eligible expenses that were incurred and covered by the PPP Loan that the Company received in 2020. The add-back is to be applied retroactively to the second and third quarters of 2020. (see below for a discussion of the PPP Loan); and
- a capital expenditure line of up to $1,000,000 with advances on the line, subject to certain limitations, permitted for up to twelve months starting May 4, 2021 (the "Borrowing Period"). Only interest is payable on advances during the Borrowing Period (see annual rate of interest below on the capital expenditure line). At the end of the Borrowing Period, the total amount advanced under the line will amortize equally based on a five-year amortization schedule with principal payment due monthly plus interest. At the maturity date of the Loan Agreement, any unpaid principal balance plus interest, if any, will become due. No advance on the capital line has been made as of December 31, 2021.

In connection with the amendment, the Company paid its lender a fee of $15,000 which is being amortized over the remaining term of the Loan Agreement, as amended, as interest expense-financing fees.

On August 10, 2021, the Company entered into another amendment to the Loan Agreement with its lender which provided, among other things, the following:

- waived the Company's failure to meet the minimum quarterly FCCR requirement for the second quarter of 2021;
- removes the quarterly FCCR testing requirement for the third quarter of 2021;
- reinstates the quarterly FCCR testing requirement starting for the fourth quarter of 2021 and revises the methodology to be used in calculating the FCCR for the quarters ending December 31, 2021, March 31, 2022, and June 30, 2022 (with no change to the minimum 1.15:1 ratio requirement for each quarter); and
- requires maintenance of a minimum of $3,000,000 in borrowing availability under the revolving credit until the minimum FCCR requirement for the quarter ended December 31, 2021 has been met and certified to the lender.

In connection with the amendment, the Company paid its lender a fee of $15,000 which is being amortized over the remaining term of the Loan Agreement, as amended, as interest expense-financing fees.

Pursuant to the Loan Agreement, as amended, payment of annual rate of interest due on the revolving credit is at prime (3.25% at December 31, 2021) plus 2% or London InterBank Offer Rate ("LIBOR") plus 3.00% and the term loan and the capital expenditure line at prime plus 2.50% or LIBOR plus 3.50%. Under the LIBOR option of interest payment, a LIBOR floor of 0.75% applies in the event that LIBOR falls below 0.75% at any point in time.

The Company may terminate its Loan Agreement, as amended upon 90 days' prior written notice upon payment in full of our obligations under the Loan Agreement. The Company agreed to pay PNC 1.0% of the total financing had the Company paid off its obligations on or before May 7, 2021 and 0.5% of the total financing if the Company pays off its obligations after May 7, 2021 but prior to or on May 7, 2022. No early termination fee will apply if the Company pays off its obligations under the Loan Agreement after May 7, 2022.

At December 31, 2021, the borrowing availability under the Company's revolving credit was approximately $8,692,000 based on our eligible receivables and includes a reduction in borrowing availability of approximately $3,020,000 from outstanding standby letters of credit.

The Company's credit facility under its Loan Agreement, as amended, 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 the 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. The Company's Loan Agreement prohibits us from paying cash dividends on our Common Stock without prior approval from our lender. The Company met its financial covenant requirements in the first quarter of 2021. The Company's FCCR calculation in the first quarter of 2021 included the add-back of approximately $5,318,000 in eligible expenses that were incurred and covered by the PPP Loan that the Company received in 2020 as permitted by the amendment dated May 4, 2021 to the Company's Loan Agreement as discussed above. The Company did not meet its FCCR requirement in the second quarter of 2021. However, this FCCR non-compliance was waived by the Company's lender pursuant to the amendment dated August 10, 2021 to the Company's Loan Agreement as discussed above. The Company was not required to test its FCCR for the third quarter 2021 pursuant to the August 10, 2021 amendment to the Loan Agreement. The Company met its financial covenant requirements for the fourth quarter of 2021, with the exception of the FCCR requirement; however, this non-compliance was waived by the Company's lender pursuant to an amendment to our Loan Agreement dated March 29, 2022 (see "Note 21 - Subsequent Events – Credit Facility" for a discussion of this waiver and additional provisions of this amendment).

PPP Loan

On April 14, 2020, the Company entered into a promissory note under the PPP with PNC, our credit facility lender, which had a balance of approximately $5,318,000 (the "PPP Loan"). The PPP was established under the CARES Act and is administered by the SBA. The CARES Act was subsequently amended by the Flexibility Act. Proceeds from the promissory note was used by the Company for eligible payroll costs,

mortgage interest, rent and utility costs as permitted under the Flexibility Act. The annual interest rate on the PPP Loan is 1.0%

On October 5, 2020, the Company applied for forgiveness on repayment of the PPP Loan as permitted under the Flexibility Act. On July 1, 2021, the Company was notified by PNC that the entire balance of the PPP Loan of approximately $5,318,000, along with accrued interest of approximately $63,000 was forgiven by the SBA, effective June 15, 2021. Accordingly, the Company recorded the entire forgiven PPP Loan balance, along with accrued interest, totaling approximately $5,381,000 as "Gain on extinguishment of debt" on its Consolidated Statement of Operations for the year ended 2021.

The following table details the amount of the maturities of long-term debt maturing in future years at December 31, 2021 (excludes debt issuance costs of $112,000).

Year ending December 31:			
(In thousands)	2022	$	441
	2023		437
	2024		220
	2025		7
Total		$	1,105

NOTE 11
ACCRUED EXPENSES

Accrued expenses include the following (in thousands) at December 31:

	2021	2020
Salaries and employee benefits	$ 3,049	$ 4,203
Accrued sales, property and other tax	183	589
Interest payable	3	50
Insurance payable	1,209	1,145
Other	634	394
Total accrued expenses	$ 5,078	$ 6,381

Accrued expenses for 2020 included an aggregate of approximately $419,000 in compensation expenses accrued under 2020 MIPs for our executive officers which was paid in July 2021.

NOTE 12
ACCRUED CLOSURE COSTS AND ARO

Accrued closure costs represent our estimated environmental liability to clean up our fixed-based regulated facilities as required by our permits, in the event of closure. Changes to reported closure liabilities (current and long-term) for the years ended December 31, 2021 and 2020, were as follows:

Amounts in thousands		
Balance as of December 31, 2019	$	6,041
Accretion expense		335
Spending		(11)
Balance as of December 31, 2020	$	6,365
Accretion expense		377
Addition to closure liability		499
Spending		(50)
Balance as of December 31, 2021	$	7,191

The addition to closure liabilities for 2021 reflects primarily estimated costs for decommissioning activities required to restore the leased property at our EWOC facility back to its original condition at the end of its lease term. As of December 31, 2021, current portion of the closure liabilities totaled approximately $578,000 which consists primarily of the closure liabilities for our EWOC facility.

The reported closure asset or ARO, is reported as a component of "Net Property and equipment" in the Consolidated Balance Sheets at December 31, 2021 and 2020 with the following activity for the years ended December 31, 2021 and 2020:

Amounts in thousands		
Balance as of December 31, 2019	$	3,539
Amortization of closure and post-closure asset		(191)
Balance as of December 31, 2020	$	3,348
Addition to closure and post-closure asset		478
Amortization of closure and post-closure asset		(250)
Balance as of December 31, 2021	$	3,576

The addition to ARO reflects closure obligations related to our EWOC facility as discussed above.

NOTE 13
INCOME TAXES

The components of (loss) income before income tax benefits by jurisdiction for continuing operations for the years ended December 31, consisted of the following (in thousands):

	2021	2020
United States	(1,733)	4,778
Canada	(1,880)	(1,391)
United Kingdom	(246)	(121)
Poland	1,061	(306)
Total (loss) income before tax benefit	$ (2,798)	$ 2,960

The components of current and deferred federal and state income tax (benefits) expense for continuing operations for the years ended December 31, consisted of the following (in thousands):

	2021	2020
Federal income tax (benefit) expense - deferred	(3,503)	4
State income tax benefit - current	(56)	(70)
Foreign income tax expense - current	26	—
State income tax benefit - deferred	(357)	(123)
Total income tax benefit	$ (3,890)	$ (189)

An overall reconciliation between the expected tax benefit using the federal statutory rate of 21% for each of the years ended 2021 and 2020 and the benefit for income taxes from continuing operations as reported in the accompanying Consolidated Statement of Operations is provided below (in thousands).

	2021	2020
Federal tax (benefit) expense at statutory rate	$ (588)	$ 622
State tax benefit, net of federal benefit	(412)	(192)
Change in deferred tax rates	(93)	(71)
Permanent items	62	126
PPP Loan forgiveness	(1,130)	—
Debt forgiveness (PFM Poland)	(518)	—
Difference in foreign rate	(135)	(68)
True-up of deferred tax items	1,058	(256)
Other	(7)	117
Decrease in valuation allowance	(2,127)	(467)
Income tax benefit	$ (3,890)	$ (189)

During the fourth quarter of 2021, the Company sold PFM Poland resulting from its decision to cease all R&D activities under its Medical Segment. Prior to the sale, the Company purchased Perma-Fix Medical LLC which was converted from PFMC, a wholly-owned subsidiary of PFM Poland. Perma-Fix Medical LLC was treated as a disregarded entity for tax purposes, resulting in a realized tax loss of $2,466,000 from uncollected payables. As a condition of the sale of PFM Poland, the Company forgave its receivables from PFM Poland resulting in a $3,089,000 capital loss on the sale of 100% interest of PFM Poland stock (see "Note 14 – PF Medical for a discussion on the sale of PFM Poland).

The Company regularly assesses the likelihood that the deferred tax asset will be recovered from future taxable income. The Company considers projected future taxable income and ongoing tax planning strategies, then records a valuation allowance to reduce the carrying value of the net deferred income taxes to an amount that is more likely than not to be realized. For the year ended December 31, 2020, the Company maintained a full valuation allowance against net deferred income tax assets because insufficient evidence existed to support the realization of any future income tax benefits. Since the end of the second quarter of 2021, however, the Company entered into a number of new contracts awarded to the Company's Services Segment (including a contract award with a value of approximately $40,000,000 for the decommissioning of a navy ship). As a result of these new contracts, the Company expected future profitability and improved overall prospects of future business. As such, as of September 30, 2021, the Company determined that it was more likely than not that it would be able to realize a portion of the deferred income tax assets. As a result, a deferred income tax benefit in the amount of approximately $2,351,000 attributable to the valuation allowance release on beginning of year deferred tax assets primarily related to U.S. Federal income taxes was realized in the three months ended September 30, 2021. The Company continues to maintain a valuation allowance against certain state and foreign tax attributes that may not be realizable along with the capital loss carryover generated during 2021 that it does not expect to realize.

The global intangible low-taxed income ("GILTI") provisions under the Tax Cuts and Jobs Act of 2017 (the "TCJA") require the Company to include in its U.S. income tax return foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary's tangible assets. The Company has elected to account for GILTI tax in the period in which it is incurred, and therefore has not provided any deferred tax impacts of GILTI in its consolidated financial statements for the years ended December 31, 2021 and 2020. As the Canada and United Kingdom foreign subsidiaries are in loss positions for 2021, no GILTI inclusion is expected for these entities for the current year. In addition, the aforementioned sale of PFM Poland is not expected to result in any GILTI inclusion.

On March 27, 2020, the CARES Act was enacted and signed into law. The CARES Act included a number of income tax law changes, including modifications to the interest limitation under Internal Revenue Code ("IRC") §163(j) and reinstatement of the ability to carry back net operating losses. On July 1, 2021, the Company received forgiveness of its PPP Loan which is included in its Consolidated Statement of Operations as "Gain on extinguishment of debt" but is exempt from income taxes.

The Company had temporary differences and net operating loss carry forwards from both our continuing and discontinued operations, which gave rise to deferred tax assets and liabilities at December 31, 2021 and 2020 as follows (in thousands):

Deferred tax assets:	2021	2020
Net operating losses	$ 10,057	$ 8,662
Environmental and closure reserves	2,040	1,839
Lease liability	575	642
Capital loss carryforward	740	—
Other	1,099	1,734
Deferred tax liabilities:		
Depreciation and amortization	(3,362)	(3,447)
Indefinite lived intangible assets	(464)	(471)
Right-of-use lease asset	(583)	(627)
481(a) adjustment	(104)	(209)
Prepaid expenses	(24)	(22)
	9,974	8,101
Valuation allowance	(6,447)	(8,572)
Net deferred income tax asset (liabilities)	3,527	(471)

The Company has estimated net operating loss carryforwards ("NOLs") for federal and state income tax purposes of approximately $19,920,000 and $72,767,000, respectively, as of December 31, 2021. These NOLs can be carried forward and applied against future taxable income, if any, and expire in various amounts starting in 2021. Approximately $19,725,000 of our federal NOLs were generated after December 31, 2017 and thus do not expire.

The tax years 2018 through 2020 remain open to examination by taxing authorities in the jurisdictions in which the Company operates.

No uncertain tax positions were identified by the Company for the years currently open under statute of limitations.

The Company had no federal income tax payable for the years ended December 31, 2021 and 2020.

NOTE 14
PF MEDICAL

As previously disclosed, the Company made the strategic decision during the fourth quarter to cease all R&D activities under its Medical Segment. The Medical Segment conducted its activities through the Company's majority-owned Polish subsidiary, PFM Poland and PFM Poland's wholly-owned subsidiary PFMC, a Delaware corporation. On December 30, 2021, the Company entered into a Sales of Shares Agreement (the "sales agreement") for its entire stock ownership (60.54%) of PFM Poland for notes receivable of approximately $47,000 (USD). The notes receivable will be paid to the Company by the buyer on the earlier of either twelve months from the closing date or within three days of a resale of the shares by the buyer. As condition precedent to the sales agreement, the Company released PFM Poland from unsatisfied trade payables owed by PFM Poland to the Company totaling approximately $2,537,000 (USD). The Company will have no continuing involvement with PFM Poland other than administrative requirements, as applicable, through the completion of PFM Poland's 2021 Polish year-end financial audit, which is expected to be completed in late May 2022.

Immediately before the sales agreement was executed, the Company converted PFMC from a S Corporation to a limited liability company (Perm-Fix Medical LLC or "PFM LLC") and acquired the entire ownership from the majority-owned Polish subsidiary for $10. The transaction was deemed to be a common control

transaction and all assets and liabilities were transferred using the historical carrying values in accordance with guidance in ASC 805-50-25, "Business Combinations, Related Issues, Recognition." The carrying amount of the non-controlling interest was adjusted to reflect the change in the ownership of the subsidiary. As a result, approximately $1,004,000 of the non-controlling interest related to the cumulative loss of PFM LLC was recognized as additional paid-in capital on the Company's Consolidated Statements of Stockholders' Equity and approximately $902,000 was recognized as a component within "Loss on deconsolidation of subsidiary" recorded on the Company's Consolidated Statement of Operations.

As a result, effective December 30, 2021, PFM Poland was no longer a subsidiary of the Company and the Company deconsolidated the entity from its consolidated financial statements in accordance with guidance in ASC 810-10-40, "Consolidation, Overall, Derecognition." Accordingly, the Company's Consolidated Balance Sheet at December 31, 2020, as reported, includes the consolidated assets and liabilities after intercompany eliminations for PFM Poland. However, the December 31, 2021 Consolidated Balance Sheet does not in include balances due to the sale and deconsolidation of PFM Poland. In addition, the Company's Consolidated Statements of Operations include results of its majority-owned Polish subsidiary for the period through December 30, 2021.

The Company recognized a non-cash "Loss on deconsolidation of subsidiary" of approximately $1,062,000 on its Consolidated Statements of Operation from the above transaction. The loss included approximately $94,000 in legal and accounting costs incurred for the transaction.

(In thousands)		
Note receivable consideration received	$	47
Less:		
Carrying amount of non-controlling interest		902
Carrying amount of accumulated other comprehensive loss		148
Net liabilities		(35)
Transaction costs		94
Loss on deconsolidation of subsidiary	$	(1,062)

NOTE 15
COMMITMENTS AND CONTINGENCIES

Hazardous Waste

In connection with our waste management services, the Company processes 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 at the disposal site, the Company 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 could would have a material adverse effect on our financial position, liquidity or results of future operations.

Tetra Tech EC, Inc. ("Tetra Tech")

During July 2020, Tetra Tech EC, Inc. ("Tetra Tech") filed a complaint in the United States District Court for the Northern District of California (the "Court") against CH2M Hill, Inc. ("CH2M") and four subcontractors of CH2M, including the Company ("Defendants"). The complaint alleges various claims, including a claim for negligence, negligent misrepresentation, equitable indemnification and related business claims against all defendants related to alleged damages suffered by Tetra Tech in respect of certain draft reports prepared by defendants at the request of the U.S. Navy as part of an investigation and review of certain whistleblower complaints about Tetra Tech's environmental

restoration at the Hunter's Point Naval Shipyard in San Francisco.

CH2M was hired by the Navy in 2016 to review Tetra Tech's work. CH2M subcontracted with environmental consulting and cleanup firms Battelle Memorial Institute, Cabrera Services, Inc., SC&A, Inc. and the Company to assist with the review, according to the complaint.

Our insurance carrier is providing a defense on our behalf in connection with this lawsuit, subject to a $100,000 self-insured retention and the terms and limitations contained in the insurance policy.

On January 7, 2021, Defendants' motion to dismiss the complaint in its entirety was granted without prejudice, with leave to amend. Tetra Tech subsequently filed a First Amended Complaint ("FAC") and Defendants filed a motion to dismiss Tetra Tech's FAC. Tetra Tech filed an opposition to Defendant's motion to dismiss Tetra Tech's FAC. Defendants, subsequently filed a joint reply to Tetra Tech's motion in opposition. On January 27, 2022 a decision and Order on Defendants' motion to dismiss was issued by the Court, which dismissed some claims, allowed for the potential amendment of other claims and declined to dismiss other claims at this time. The Company continues to believe it does not have any liability to Tetra Tech.

PF Canada

During the fourth quarter of 2021, PF Canada received a Notice of Termination ("NOT") from Canadian Nuclear Laboratories, LTD. ("CNL") on a Task Order Agreement ("TOA") that PF Canada entered into with CNL in May 2019 for remediation work within Ontario, Canada ("Agreement"). The NOT was received after work under the TOA was substantially completed. CNL may terminate the TOA at any time for convenience. As of December 31, 2021, PF Canada has approximately $2,640,000 in unpaid receivables and unbilled costs due from CNL as a result of work performed under the TOA. Additionally, CNL has approximately $871,000 in contractual holdback under the TOA that is payable to PF Canada. CNL also established a bond securing approximately $1,900,000 (CAD) to cover certain issue raised in connection with the TOA. Under the TOA, CNL may be entitled to set off certain costs and expenses incurred by CNL in connection with the termination of the TOA, including the bond as discussed above, against amounts owed to PF Canada for work performed by PF Canada or its subcontractors. PF Canada continues to be in discussions with CNL to finalize the amounts due to PF Canada under the TOA and continues to believes these amounts are due and payable.

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 $28,177,000 which includes available capacity to allow for annual inflation and other performance and surety bond requirements. Total coverage under the 2003 Closure Policy, as amended, was $20,403,000 at December 31, 2021. At December 31, 2021 and December 31, 2020, finite risk sinking funds contributed by the Company related to the 2003 Closure Policy which is included in other long term assets on the accompanying Consolidated Balance Sheets totaled $11,471,000 and $11,446,000, respectively, which included interest earned of $2,000,000 and $1,975,000 on the finite risk sinking funds as of December 31, 2021 and December 31, 2020, respectively. Interest income for the year ended 2021 and 2020 was approximately $25,000 and $139,000, respectively. If the Company so elects, AIG is obligated to pay us an amount equal to 100% of the finite risk 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.

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 December 31, 2021, the total amount of standby letters of credit outstanding was approximately $3,020,000 and the total amount of bonds outstanding was approximately $50,109,000.

NOTE 16
PROFIT SHARING PLAN

The Company adopted a 401(k) Plan in 1992, which is intended to comply with Section 401 of the Internal Revenue Code and the provisions of the Employee Retirement Income Security Act of 1974. All full-time employees who have attained the age of 18 are eligible to participate in the 401(k) Plan. Eligibility is immediate upon employment but enrollment is only allowed during four quarterly open periods of January 1, April 1, July 1, and October 1. Participating employees may make annual pretax contributions to their accounts up to 100% of their compensation, up to a maximum amount as limited by law. The Company, at its discretion, may make matching contributions of 25% based on the employee's elective contributions. Company contributions vest over a period of five years. In 2021 and 2020, the Company contributed approximately $589,000 and $594,000 in 401(k) matching funds, respectively.

NOTE 17
RELATED PARTY TRANSACTIONS

David Centofanti
David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of $184,000 and $181,000 for 2021 and 2020, respectively. David Centofanti is the son of our EVP of Strategic Initiatives and a Board member.

Employment Agreements
The Company entered into an employment agreement dated July 22, 2020 with each of our executive officers (each employment agreement referred to as "Employment Agreement").

Each Employment Agreement is effective for three years from July 22, 2020 (the "Initial Term") unless earlier terminated by the Company or by the executive officer. At the end of the Initial Term of each Employment Agreement, each Employment Agreement will automatically be extended for one additional year, unless at least six months prior to the expiration of the Initial Term, we or the executive officer provides written notice not to extend the terms of the Employment Agreement. Each Employment Agreement provides for annual base salary, performance bonuses (as provided in the MIP as approved by our Compensation Committee and Board) and other benefits commonly found in such agreement.

Pursuant to each Employment Agreement, if the executive officer's employment is terminated due to death/disability or for cause (as defined in the agreement), the Company will pay to the executive officer or to his estate an amount equal to the sum of any unpaid base salary and accrued unused vacation time through the date of termination and any benefits due to the executive officer under any employee benefit plan (the "Accrued Amounts") plus any performance compensation payable pursuant to the MIP with respect to the fiscal year immediately preceding the date of termination.

If the executive officer terminates his employment for "good reason" (as defined in the agreement) or is terminated by us without cause (including any such termination for "good reason" or without cause within 24 months after a Change in Control (as defined in the agreement)), the Company will pay the executive officer the Accrued Amounts, two years of full base salary, and two times the performance compensation (under the MIP) earned with respect to the fiscal year immediately preceding the date of termination provided the performance compensation earned with respect to the fiscal year immediately preceding the date of termination has not been paid. If performance compensation earned with respect to the fiscal year immediately preceding the date of termination has been made to the executive officer, the executive officer will be paid an additional year of the performance compensation earned with respect to the fiscal year immediately preceding the date of termination. If the executive terminates his employment for a reason other than for good reason, the Company will pay to the executive an amount equal to the Accrued Amounts plus any performance compensation payable pursuant to the MIP with respect to the fiscal year immediately preceding the date of termination.

If there is a Change in Control (as defined in the agreement), all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of termination through the original term of the options. In the event of the death of an executive officer, all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of death, with such options exercisable for the lesser of the original option term or twelve months from the date of the executive officer's death. In the event an executive officer terminates his employment for "good reason" or is terminated by the Company without cause, all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of termination, with such options exercisable for the lesser of the original option term or within 60 days from the date of the executive's date of termination. Severance benefits payable with respect to a termination (other than Accrued Amounts) shall not be payable until the termination constitutes a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h)).

MIPs

On January 21, 2021, the Compensation Committee and our Board approved individual MIP for the calendar year 2021 for each of our executive officers. Each MIP is effective January 1, 2021 and applicable for year 2021. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification. The performance compensation under each of the MIPs is based upon meeting certain of the Company's separate target objectives during 2021. Assuming each target objective is achieved under the same performance threshold range under each MIP, the total potential target performance compensation payable ranged from 5% to 150% of the base salary for the CEO ($17,220 to $516,600), 5% to 100% of the base salary for the CFO ($14,000 to $280,000), 5% to 100% of the base salary for the EVP of Strategic Initiatives ($11,667 to $233,336), 5% to 100% of the base salary for the EVP of Nuclear and Technical Services ($14,000 to $280,000) and 5% to 100% ($12,000 to $240,000) of the base salary for the EVP of Waste Treatment Operations. No performance compensation was earned under any of the 2021 MIPs.

Board Compensation

On January 21, 2021, the Company's Compensation Committee and the Board approved, effective January 1, 2021, the following revisions to the annual compensation of each non-employee Board member for service on the Board and the Board Committee(s) for which the Board member serves:

- each director is to be paid a quarterly fee of $11,500, compared to the previous quarterly fee of $8,000;
- the Chairman of the Board is to be paid an additional quarterly fee of $8,750, compared to the Chairman's previous additional quarterly fee of $7,500;
- the Chairman of the Audit Committee is to be paid an additional quarterly fee of $6,250, compared to the Audit Chair's previous additional quarterly fee of $5,500;
- the Chairman of each of the Compensation Committee, the Corporate Governance and Nominating Committee ("Nominating Committee"), and the Strategic Advisory Committee ("Strategic Committee") is to receive $3,125 in additional quarterly fees. No additional quarterly fees were previously paid to the chairs of such committees. The Chairman of the Board is not eligible to receive a quarterly fee for serving as the Chairman of any the aforementioned committees;
- each Audit Committee member (excluding the Chairman of the Audit Committee) is to receive an additional quarterly fee of $1,250; and
- each member of the Compensation Committee, the Nominating Committee, and the Strategic Committee is to receive a quarterly fee of $500. Such fee is payable only if the member does not also serve as the Chairman of another standing committee or as the Chairman of the Board.

Each non-employee Board member continues to receive $1,000 for each in-person board meeting attendance and a $500 fee for meeting attendance via conference call. Reimbursements of expenses for attending meetings of the Board are paid in cash at the time of the applicable Board meeting.

Each non-employee director may continue to elect to have either 65% or 100% of such fees payable in Common Stock under the 2003 Plan, with the balance, if any, payable in cash (see "Note 6 – Capital Stock,

Stock Plans, Warrants, and Stock Based Compensation – Stock Option Plans" for a discussion of the 2003 Plan).

NOTE 18
SEGMENT REPORTING

In accordance with ASC 280, "Segment Reporting", we define an operating segment as a business activity:

- from which we may earn revenue and incur expenses;
- whose operating results are regularly reviewed by the CODM to make decisions about resources to be allocated to the segment and assess its performance; and
- for which discrete financial information is available.

We have three reporting segments, which include Treatment and Services Segments, which are based on a service offering approach; and Medical, whose primary purpose was the R&D of a medical isotope production technology. The Medical Segment had not generated any revenues. During December 2021, the Company made the strategic decision to cease all R&D activities under the Medical Segment which resulted in the sale of 100% of its interest of PFM Poland (see "Note 14 – PF Medical" for a discussion of this transaction). Our reporting segments exclude our corporate headquarter, business center and our discontinued operations (see "Note 9 – Discontinued Operations") which do not generate revenues.

The table below shows certain financial information of our reporting segments as of and for the years ended December 31, 2021 and 2020 (in thousands).

Segment Reporting as of and for the year ended December 31, 2021

	Treatment	Services	Medical	Segments Total	Corporate [(2)]	Consolidated Total
Revenue from external customers	$ 32,992	$ 39,199	—	$ 72,191 [(3)] [(4)]	$ —	$ 72,191
Intercompany revenues	1,265	47	—	1,312	—	—
Gross profit	6,718	106	—	6,824	—	6,824
Research and development	221	71	414	706	40	746
Interest income	1	—	—	1	25	26
Interest expense	(100)	(10)	—	(110)	(137)	(247)
Interest expense-financing fees	—	(1)	—	(1)	(40)	(41)
Depreciation and amortization	1,306	353	—	1,659	28	1,687
Segment income (loss) before income taxes	2,283	(3,044)	(1,476) [(11)(12)]	(2,237)	(561) [(9)(11)]	(2,798)
Income tax (benefit) expense	(150)	(962)	26	(1,086)	(2,804)	(3,890) [(10)]
Segment income (loss)	2,433	(2,082)	(1,502)	(1,151)	2,243	1,092
Segment assets[(1)]	37,050	15,244 [(8)]	48	52,342	24,959 [(5)]	77,301
Expenditures for segment assets (net)	1,363	205	—	1,568	9	1,577 [(7)]
Total debt	25	14	—	39	954	993 [(6)]

Segment Reporting as of and for the year ended December 31, 2020

	Treatment	Services	Medical	Segments Total	Corporate [(2)]	Consolidated Total
Revenue from external customers	$ 30,143	$ 75,283	—	$ 105,426 [(3)] [(4)]	$ —	$ 105,426
Intercompany revenues	1,493	25	—	1,518	—	—
Gross profit	5,491	10,402	—	15,893	—	15,893
Research and development	243	132	311	686	76	762
Interest income	1	—	—	1	139	140
Interest expense	(115)	(27)	—	(142)	(256)	(398)
Interest expense-financing fees	—	—	—	—	(294)	(294)
Depreciation and amortization	1,204	354	—	1,558	38	1,596
Segment income (loss) before income taxes	1,494	7,826	(311)	9,009	(6,049)	2,960
Income tax (benefit) expense	(264)	6	—	(258)	69	(189)
Segment income (loss)	1,758	7,820	(311)	9,267	(6,118)	3,149
Segment assets[(1)]	32,324	22,368 [(8)]	17	54,709	24,210 [(5)]	78,919
Expenditures for segment assets (net)	1,264	451	—	1,715	—	1,715 [(7)]
Total debt	—	23	—	23	6,706	6,729 [(6)]

(1) Segment assets have been adjusted for intercompany accounts to reflect actual assets for each segment.

(2) Amounts reflect the activity for corporate headquarters not included in the segment information.

(3) The Company 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 60,812,000 or 84.2% of total revenue for 2021 and 96,582,000 or 91.6% of total revenue for 2020. The following reflects such revenue generated by our two segments:

	2021			2020		
	Treatment	Services	Total	Treatment	Services	Total
Domestic government	$ 22,538	$ 29,013	$ 51,551	$ 22,795	$ 68,237	$ 91,032
Foreign government	577	8,684	9,261	415	5,135	5,550
Total	$ 23,115	$ 37,697	$ 60,812	$ 23,210	$ 73,372	$ 96,582

(4) The following table reflects revenue based on customer location:

	2021	2020
United States	$ 62,257	$ 99,790
Canada	9,277	5,550
Germany	567	—
United Kingdom	90	86
Total	$ 72,191	$ 105,426

[5] Amount includes assets from our discontinued operations of $96,000 and $103,000 at December 31, 2021 and 2020, respectively.

[6] Net of debt discount/debt issuance costs of ($112,000) and ($105,000) for 2021 and 2020, respectively (see "Note 10 – "Long-Term Debt" for additional information).

[7] Net of financed amount of $585,000 and $883,000 for the year ended December 31, 2021 and 2020, respectively.

[8] Includes long-lived asset (net) for our PF Canada, Inc. subsidiary of $25,000 and $33,000 for the year ended December 31, 2021 and 2020, respectively.

[9] Amount includes approximately $5,381,000 of "Gain on extinguishment of debt" recorded in connection with the Company's PPP Loan which was forgiven by the SBA effective June 15, 2021 (see "Note 10 – Long Term Debt – PPP Loan" for information of this loan forgiveness).

[10] Includes tax benefit recorded in amount of approximately $2,351,000 resulting from release of valuation allowance on the Company's deferred tax assets (see "Note 13 Income Taxes" for a discussion of this tax benefit).

[11] Includes elimination of gain/loss of $2,537,000 in debt forgiveness between PFM Poland and the Company (see "Note 14 – PF Medical for a discussion of this debt forgiveness.

[12] Amount includes a "Loss on deconsolidation of subsidiary" recorded in the amount of approximately $1,062,000 resulting from the sale of PFM Poland (see "Note 14 – PF Medical for a discussion of this loss).

NOTE 19
DEFERRAL OF EMPLOYMENT TAX DEPOSITS

The CARES Act, as amended by the Flexibility Act which was signed into law on June 5, 2020, provides employers the option to defer the payment of an employer's share of social security taxes beginning on March 27, 2020 through December 31, 2020 with 50% of the amount of social security taxes deferred to become due on December 31, 2021 with the remaining 50% due on December 31, 2022. The Company's deferment of such taxes totaled approximately $1,252,000 of which approximately $626,000 was paid in December 2021. At December 31, 2021, the remaining $626,000 in deferred social security taxes was included in "Accrued expenses" within current liabilities in the Company's Consolidated Balance Sheets.

NOTE 20
VARIABLE INTEREST ENTITIES ("VIE")

The Company and Engineering/Remediation Resources Group, Inc. ("ERRG") previously entered into an unpopulated joint venture agreement for project work bids within the Company's Services Segment with the joint venture doing business as Perma-Fix ERRG, a general partnership. The Company has a 51% partnership interest in the joint venture and ERRG has a 49% partnership interest in the joint venture.

The Company determines whether joint ventures in which it has invested meet the criteria of a VIE at the start of each new venture and when a reconsideration event has occurred. A VIE is a legal entity that satisfies any of the following characteristics: (a) the legal entity does not have sufficient equity investment at risk; (b) the equity investors at risk as a group, lack the characteristics of a controlling financial interest; or (c) the legal entity is structured with disproportionate voting rights.

The Company consolidates a VIE if it is determined to be the primary beneficiary of the VIE. The primary beneficiary has both the power to direct the activities of the VIE that most significantly impact the entity's economic performance and the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE.

Based on the Company's evaluation of Perma-Fix ERRG and related agreements with Perma-Fix ERRG, the Company determined that Perma-Fix ERRG continues to be a VIE in which the Company is the primary beneficiary. At December 31, 2021, Perma-Fix ERRG had total assets of $1,423,000 and total liabilities of $1,423,000 which are all recorded as current.

NOTE 21
SUBSEQUENT EVENTS

Management evaluated events occurring subsequent to December 31, 2021 through April 6, 2022, the date these consolidated financial statements were available for issuance, and other than as noted below determined that no material recognizable subsequent events occurred.

Executive Compensation
The Compensation Committee and the Board determined that no performance payment would be made to each executive officer under his 2021 MIP. In lieu of any performance payment to each executive officer under his 2021 MIP and in an attempt to retain the executive officer, on January 20, 2022, the Compensation Committee and the Board determined that the base annual compensation for each executive officer for 2022 is increased by approximately 6.4%, effective January 1, 2022, to offset the cost of living increase.

On January 20, 2022, the Board and the Compensation Committee also approved individual MIP for the calendar year 2022 for each of our executives officers. Each MIP is effective January 1, 2022 and applicable for year 2022. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification. The performance compensation under each of the MIPs is based upon meeting certain of the Company's separate target objectives during 2022. Assuming each target objective is achieved under the same performance threshold range under each MIP, the total potential target performance compensation payable ranges from 25% to 150% of the 2022 base salary for the CEO ($93,717 to $562,304), 25% to 100% of the 2022 base salary for the CFO ($76,193 to $304,772), 25% to 100% of the 2022 base salary for the EVP of Strategic Initiatives ($63,495 to $253,980), 25% to 100% of the 2022 base salary for the EVP of Nuclear and Technical Services ($76,193 to $304,772) and 25% to 100% ($65,308 to $261,233) of the 2022 base salary for the EVP of Waste Treatment Operations.

Credit Facility
On March 29, 2022, the Company entered into an amendment to its Loan Agreement with its lender which provided, among other things, the following:

- waived the Company's failure to meet the minimum quarterly FCCR requirement for the fourth quarter of 2021;
- removes the quarterly FCCR testing requirement for the first quarter of 2022;
- reinstates the quarterly FCCR testing requirement starting for the second quarter of 2022 and revises the methodology to be used in calculating the FCCR for the quarters ending June 30, 2022, September 30, 2022, and December 31, 2022 (with no change to the minimum 1.15:1 ratio requirement for each quarter);
- requires maintenance of a minimum of $3,000,000 in borrowing availability under the revolving credit until the minimum FCCR requirement for the quarter ended June 30, 2022 has been met and certified to the lender; and
- revises the annual rate used to calculate the Facility Fee (as defined in the Loan Agreement) on the revolving credit, with addition of the capital expenditure line, from 0.375% to 0.500%. Upon meeting the minimum FCCR requirement of 1;15:1 on a twelve month trailing basis, the Facility Fee rate of 0.375% will be reinstated.

In connection with the amendment, we paid our lender a fee of $15,000.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of disclosure controls and procedures.

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic reports filed with the Securities and Exchange Commission (the "Commission") is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Commission and that such information is accumulated and communicated to our management, including the Chief Executive Officer ("CEO") (Principal Executive Officer), and Chief Financial Officer ("CFO") (Principal Financial Officer), as appropriate to allow timely decisions regarding the required disclosure. In designing and assessing our disclosure controls and procedures, our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their stated control objectives and are subject to certain limitations, including the exercise of judgment by individuals, the difficulty in identifying unlikely future events, and the difficulty in eliminating misconduct completely. Our management, with the participation of our CEO and CFO, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended. Based upon this assessment, our CEO and CFO have concluded that our disclosure controls and procedures were not effective as of December 31, 2021, due to a material weakness in our internal control over financial reporting as set forth below.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934. Internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or fraudulent acts. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. A control system, no matter how well designed, can provide only reasonable assurance with respect to financial statement preparation and presentation.

Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the consolidated financial statements in accordance with generally accepted accounting principles in the United States of America, and that receipts and expenditures of the Company are being made only in accordance with appropriate authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the consolidated financial statements.

Management, with the participation of our CEO and CFO, conducted an assessment of the effectiveness of internal control over financial reporting as of December 31, 2021 based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment, management and our CEO and CFO, concluded that the Company's internal control over financial reporting was not effective as of December 31, 2021 due to the following:

Certain revenue contracts that contained nonstandard terms and conditions were not appropriately evaluated in accordance with ASC 606, "Revenue from Contracts with Customers." Specifically, management did not have the appropriate controls in place over the determination of revenue recognition for nonroutine and complex revenue transactions. The material weakness identified resulted in errors in the Company's books and records which led to audit adjustments. The errors arising from the underlying revenue adjustments were not material to the financial statements reported in any interim or annual period and therefore, did not result in a revision to any previously filed financial statements. However, the control deficiencies could result in misstatements of the revenue accounts and related disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected in a timely manner. Accordingly, we have determined that the control deficiencies when evaluated in the aggregate constitute a material weakness.

Remediation of Material Weakness in Internal Control Over Financial Reporting
The material weakness as discussed above was primarily attributed to the uniqueness of certain of the Company's contracts that contain nonstandard terms and conditions. Although the Company's policies and procedures were in place to ensure guidance under ASC 606 were applied to the majority of its contracts accurately, the Control failed to operate in a manner to specifically identify the nonstandard terms that would impact revenue recognition. The Company is evaluating the material weakness identified and is developing a plan of remediation to strengthen our internal controls pertaining to evaluating revenue contracts that contain nonstandard terms and conditions. This remediation plan includes evaluating the manner in which we use third-party consulting firms with expertise in applying the revenue recognition guidance that will assist management with the assessment and evaluation of revenue contracts executed that contain nonstandard terms and conditions. In conjunction with further evaluation of this relationship, management will also perform a more rigorous evaluation of these nonstandard revenue contracts in accordance with ASC 606.

The Company is committed to maintaining a strong internal control environment and believes that these remediation efforts will represent significant improvements in our controls. The Company has started to implement these steps, however, some of these steps will take time to be fully integrated and confirmed to be effective and sustainable. Additional controls may also be required over time. Until the remediation steps set forth above are fully implemented and tested, the material weakness described above will continue to exist.

Grant Thornton LLP, an independent registered public accounting firm, audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2021 and based on that audit, issued their report which is included herein.

Changes in Internal Control over Financial Reporting
Other than the aforementioned material weakness and remediation plan noted, 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 the fiscal quarter ended December 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Perma-Fix Environmental Services, Inc.

Opinion on internal control over financial reporting
We have audited the internal control over financial reporting of Perma-Fix Environmental Services, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2021, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). In our opinion, because of the effect of the material weakness described in the following paragraphs on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2021, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by COSO.

A material weakness is a deficiency, or combination of control deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weakness has been identified and included in management's assessment.

Management does not have effective controls in place over the determination of revenue recognition for non-standard revenue contracts.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated financial statements of the Company as of and for the year ended December 31, 2021. The material weakness identified above was considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2021 consolidated financial statements, and this report does not affect our report dated April 6, 2022 which expressed an unqualified opinion on those financial statements.

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

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

Definition and limitations of internal control over financial reporting
A company's internal control over financial reporting is a process designed to provide

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

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

Other information

We do not express an opinion or any other form of assurance on management's statement referring to plans for remediation.

/s/GRANT THORNTON LLP

Atlanta, Georgia
April 6, 2022

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

DIRECTORS

The following table sets forth, as of the date of this Report, information concerning our Board of Directors (the "Board"):

NAME [(1)]	AGE	POSITION
Mr. Thomas P. Bostick	65	Director
Dr. Louis F. Centofanti	78	Director; EVP of Strategic Initiatives
Ms. Kerry C. Duggan [(1)]	43	Director
Mr. Joseph T. Grumski	60	Director
The Honorable Joe R. Reeder	74	Director
Mr. Larry M. Shelton	68	Chairman of the Board
The Honorable Zach P. Wamp	64	Director
Mr. Mark A. Zwecker	71	Director

Each director is elected to serve until the next annual meeting of stockholders or until their respective successors are duly elected and qualified.

[(1)] Ms. Duggan was unanimously elected by the Board effective May 4, 2021 to fill a Board vacancy created by the expansion of the Board from seven to eight directors.

Director Information

Our directors and executive officers, their ages, the positions with us held by each of them, the periods during which they have served in such positions and a summary of their recent business experience are set forth below. Each of the biographies of the current directors listed below also contains information regarding such person's service as a director, business experience, director positions with other public companies held currently or at any time during the past five years, and the experience, qualifications, attributes and skills that our Board considered in nominating or appointing each of them to serve as one of our directors.

Mr. Thomas P. Bostick

Mr. Bostick, a director since August 2020, is currently the CEO of Bostick Global Strategies, LLC, a position he has held since July 2016. Bostick Global Strategies, LLC provides strategic advisory support in the areas of Engineering, Environmental Sustainability, Human Resources, Biotechnology, Education, Executive Coaching, and Agile Project Management. In February 2021, Mr. Bostick was selected by U. S. Senator Jack Reed, Chairman of the Senate Armed Services Committee, to serve as a member of a new commission consisting of eight appointed individuals, tasked with renaming Confederate-named military bases and property. Mr. Bostick previously served (from November 2017 to February 2020) as the Chief Operating Officer ("COO") and President of Intrexon Bioengineering, a division of Intrexon Corporation (formerly NASDAQ: XON; now NASDAQ: PGEN). Intrexon Bioengineering addresses global challenges across food, agriculture, environmental, energy, and industrial fields by advancing biologically engineered solutions to improve sustainability and efficiency. As the COO and President of Intrexon Bioengineering, Mr. Bostick oversaw operations across the company's multiple technology divisions and led a major restructuring of Intrexon Corporation. Mr. Bostick is a member of the board of HireVue, Inc., a privately-held company specializing in online video interviewing services for employers. Since October 2020, Mr. Bostick has served as a board member of CSX Corporation (NASDAQ: CSX), a publicly-held rail transportation company, and since December 2020, as a member of both the Finance Committee and the

Governance Committee of CSX Corporation. Effective June 1, 2021, Mr. Bostick joined the Fidelity Equity and High Income Fund Board of Trustees, which oversees the high income and certain equity funds sponsored by Fidelity Investments, Inc., a privately-owned investment management company. In addition to Mr. Bostick's service on the boards of for-profit companies, he has since November 2016 also served on the board of American Corporate Partners, a 501(c)(3) nonprofit organization dedicated to assisting U.S. veterans in their transition from the armed services to the civilian workforce. Effective March 15, 2022, Mr. Bostick became a member of the board of Allonnia, a start-up environmental biotech company whose mission is to leverage the power of biotechnology and engineered system to create transformative solutions for a waste-and pollution-free world. Mr. Bostick was recently named as one of 2021's Most Influential Black Corporate Directors by Savoy Magazine, a national publication that showcases and drives positive dialogue about Black culture.

Mr. Bostick has also had a distinguished career in the U.S. military, retiring from the US Army in July 2016 with the rank of Lieutenant General. During his distinguished military career, he served as the 53rd U.S. Army Chief of Engineers and the Commanding General of the U.S. Army Corps of Engineers (USACE). As the senior military officer of the Army Corps of Engineers, General Bostick was responsible for overseeing and supervising most of the Nation's civil works infrastructure and military construction, hundreds of environmental protection projects, as well as managing 34,000 civilian employees and military personnel in over 110 countries around the world with a $25 billion annual budget. As the Chief of Engineers, General Bostick led a $5 billion recovery program after Superstorm Sandy. Before his command of USACE, General Bostick served in a variety of command and staff assignments with the U.S. Army both in the U.S. and abroad.

General Bostick's military honors and decorations include the Distinguished Service Medal, the Defense Superior Service Medal, the Bronze Star, the Legion of Merit with two oak leaf clusters, the Defense Meritorious Service Medal, the Meritorious Service Medal with four oak leaf clusters, the Joint Service Commendation Medal, the Army Commendation Medal, the Army Achievement Medal with one oak leaf cluster, the Combat Action Badge, the U.S Parachutist badge, the Army Recruiter Badge, and the Ranger Tab.

As a White House Fellow, one of America's most prestigious programs for leadership and public service, General Bostick was a special assistant to the Secretary of Veterans Affairs. He graduated with a Bachelor of Science degree from the U.S. Military Academy at West Point and later returned to the Academy to serve as an Associate Professor of Mechanical Engineering. He holds Master's degrees in Civil Engineering and Mechanical Engineering from Stanford University and a Doctorate in Systems Engineering from George Washington University. He is a Member of the National Academy of Engineering and the National Academy of Construction.

Mr. Bostick's distinguished career in both the government and private sectors brings valuable experience and insight into solving complex issues domestically and globally. His extensive knowledge and problem-solving experiences enhance the Board's ability to address significant challenges in the nuclear market and led the Board to conclude that he should serve as a director.

Dr. Louis F. Centofanti

Dr. Centofanti, the founder of the Company and a director of the Company since its inception in 1991, currently holds the position of EVP of Strategic Initiatives. From March 1996 to September 8, 2017 and from February 1991 to September 1995, Dr. Centofanti held the position of President and CEO of the Company. Dr. Centofanti served as Chairman of the Board from the Company's inception in February 1991 until December 16, 2014. In January 2015, Dr. Centofanti was appointed by the U.S Secretary of Commerce Penny Prizker to serve on the U.S. Department of Commerce's Civil Nuclear Trade Advisory Committee ("CINTAC"). The CINTAC is composed of industry representatives from the civil nuclear industry and meets periodically throughout the year to discuss the critical trade issues facing the U.S. civil nuclear sector. From 1985 until joining the Company, Dr. Centofanti served as SVP of USPCI, Inc., a large publicly-held hazardous waste management company, where he was responsible for managing the treatment, reclamation

and technical groups within USPCI. In 1981, he and Mark Zwecker, a current Board member of the Company, founded PPM, Inc. (later sold to USPCI), a hazardous waste management company specializing in treating PCB-contaminated oil. From 1978 to 1981, Dr. Centofanti served as Regional Administrator of the U.S. Department of Energy for the southeastern region of the United States. Dr. Centofanti has a Ph.D. and a M.S. in Chemistry from the University of Michigan, and a B.S. in Chemistry from Youngstown State University.

As founder of Perma-Fix and PPM, Inc., and as a senior executive at USPCI, Dr. Centofanti combines extensive business experience in the waste management industry with a drive for innovative technology which is critical for a waste management company. In addition, his service in the government sector provides a solid foundation for the continuing growth of the Company, particularly within the Company's Nuclear business. Dr. Centofanti's comprehensive understanding of the Company's operations and his extensive knowledge of its history, coupled with his drive for innovation and excellence, positions Dr. Centofanti to optimize our role in this competitive, evolving market, and led the Board to conclude that he should serve as a director.

Kerry C. Duggan
Effective May 4, 2021, Ms. Duggan was unanimously elected by the Board to serve as a member of the Company's Board of Directors. Ms. Duggan is the founder of SustainabiliD, a woman-owned advisory services firm working with gamechangers to equitably solve the climate crisis. She has been named the founding director of the University of Michigan's SEAS Sustainability Clinic in Detroit.

In 2021, Ms. Duggan was appointed to the Department of Energy's prestigious Secretary of Energy Advisory Board, serving under Secretary Jennifer Granholm. In February 2021, Michigan Governor Gretchen Whitmer also appointed Duggan to the State of Michigan's Council on Climate Solutions, to advise on the implementation of the MI Healthy Climate Plan, to reduce greenhouse gas emissions and to transition toward economy-wide carbon neutrality. In 2020-21, Ms. Duggan was a member of the Biden-Harris Transition Team on the Department of Energy Agency Review Team. In May 2020, Ms. Duggan was named a member of the Biden-Sanders Unity Task Force on Climate Change, serving as one of Biden's five delegates alongside Gina McCarthy and Sec. John Kerry; and later co-chaired the climate change policy committee and served as a Surrogate for the Biden campaign.

Previously, Ms. Duggan served nearly seven years in public-service leadership roles, including inside the Obama-Biden White House as Deputy Director for Policy in the Office of Vice President Biden Policy to then Vice President Joe Biden for energy, environment, climate, and distressed communities. Simultaneously, she served as Deputy Director of the Detroit Federal Working Group to support Detroit's revitalization. Prior to the White House, Ms. Duggan held several senior roles at the Department of Energy, including as Secretary Moniz's embedded Liaison to the City of Detroit (where she championed a citywide LED streetlight conversion), and in the Office of Energy Efficiency & Renewable Energy as Director of Stakeholder Engagement, Director of Legislative, Regulatory & Urban Affairs, and as a Senior Policy Advisor.

After her time in federal service, Ms. Duggan co-founded the Smart Cities Lab, was a Partner with the Honorable Thomas J. Ridge's firm, RIDGE-LANE Limited Partners, and served on the external advisory board of the University of Michigan's Erb Institute for Global Sustainable Enterprise and was a Board Member at the Global Council for Science and the Environment. She was also a Trustee of the University Liggett School. In 2018, Ms. Duggan was named to the prestigious "40 Under 40" list by Crain's Detroit Business. She previously worked at the League of Conservation Voters in Washington, D.C.

Currently, Ms. Duggan serves as a senior advisor at The RockCreek Group, LP, a registered private fund adviser that manages fund of funds portfolios and direct equity trading portfolios. She also sits on the corporate advisory boards of Our Next Energy, Inc. (ONE), a privately-held energy storage solutions company; Aclima, Inc., a public benefit corporation dedicated to protecting public health, reducing climate-changing emissions, and advancing environmental justice; BlueConduit, a privately-held water analytics company that builds machine learning software to support the efficient removal of lead and other dangerous

materials from communities; Walker-Miller Energy Services, L.L.C., a privately-held energy efficiency services company; HEVO, Inc., a privately-held developer of wireless charging units designed to charge electronic vehicles on the go; Commonweal Investors, a private equity firm that invests in early-stage technology companies advancing a sustainable economy, upgrading transportation and infrastructure systems, and revitalizing the urban environment; and Arctaris Impact Investors, LLC, an investment management company that manages funds which invest in growth-oriented operating businesses and community infrastructure projects located in underserved communities.

Ms. Duggan earned her B.S. in Environmental Studies from the University of Vermont and her M.S. in Natural Resource Policy & Behavior from the University of Michigan.

Ms. Duggan's career in both the government and private sectors brings valuable experience and insight into solving complex issues. Her extensive knowledge and problem-solving experiences, with an Environmental, Social and Governance ("ESG") mindset and Diversity, Equity and Inclusion ("DEI") core values, led the Board to conclude that she should serve as a director.

Mr. Joseph T. Grumski
Mr. Grumski, a director of the Company since February 2020, has served since April 2020 as the President and CEO of TAS Energy Inc. ("TAS"), a wholly-owned subsidiary of Comfort Systems USA, Inc. (NYSE: FIX), a publicly-held company that provides mechanical and electrical contracting services in 139 locations and 114 cities throughout the United States. Prior to the acquisition of TAS by Comfort Systems USA, Inc., Mr. Grumski served as President and CEO and a board member of TAS from May 2013 to March 2020. From 1997 to February 2013, Mr. Grumski was employed with Science Applications International Corporation ("SAIC") (NYSE: SAIC), a publicly-held company that provides government services and information technology support. During his employment with SAIC, Mr. Grumski held various senior management positions, including the positions of President of SAIC's Energy, Environment & Infrastructure ("E2I") commercial subsidiary and General Manager of the E2I Business Unit. SAIC's E2I commercial subsidiary and Business Unit is comprised of approximately 5,200 employees performing over $1.1 billion of services for federal, commercial, utility and state customers. Mr. Grumski's many accomplishments with SAIC included growing SAIC's $300 million federal environmental business to a top ranked, $1.1 billion business; receiving the National Safety Council "Industry Leader" award in 2009; and receiving highest senior executive performance rating three years in a row. Mr. Grumski began his career with Gulf Oil Company and has progressed through senior level engineering, operations management, and program management positions with various companies, including Westinghouse Electric Corporation and Lockheed Martin, Inc. Mr. Grumski received a B.S. in Mechanical Engineering from The University of Pittsburgh and a M.S in Mechanical Engineering from West Virginia University.

Mr. Grumski has had an extensive career in solving and overseeing solutions to complex issues involving both domestic and international concerns. In addition, his extensive experience in companies that provide services to the government sector as well as his experience in the commercial sector provide solid experience for the continuing growth of the Company's Treatment and Services Segment. Mr. Grumski's extensive knowledge and problem-solving experiences, executive operational leadership experience and governance experience enhance the Board's ability to address significant challenges in the nuclear market, and led the Board to conclude that he should serve as a director.

The Honorable Joe R. Reeder
Mr. Reeder, a director since 2003, is a principal shareholder in the law firm of Greenberg Traurig LLP, one of the nation's largest law firms, with 41 offices and 2,400 attorneys worldwide, for which Mr. Reeder served as Shareholder-in-Charge of the law firm's Mid-Atlantic Region from 1999 to 2008. His clientele includes celebrities, heads of state, sovereign nations, international corporations, and law firms. As the 14th Undersecretary of the U.S. Army (1993-97), Mr. Reeder also served three years as Chairman of the Panama Canal Commission's Board, overseeing a multibillion-dollar infrastructure program. For the past 18 years, he has served on the Canal's International Advisory Board. He has written extensively in leading journals on the subject of corporate cybersecurity. Mr. Reeder also has served on the boards of the National Defense Industry Association ("NDIA"), chairing NDIA's Ethics Committee, the Armed Services YMCA, the Marshall Legacy Institute, and many other private companies and charitable organizations. Mr.

Reeder served as a director of ELBIT Systems of America, LLC, (2005-2020), a subsidiary of Elbit Systems Ltd. (NASDAQ: ESLT), a multi-billion-dollar provider of defense, homeland security, and commercial aviation system solutions. From 2004 to 2017, Mr. Reeder served as a director of Washington First Bank, the bank subsidiary of WashingtonFirst Bankshares, Inc. (NASDAQ: WSBI), and from 2018 to 2020, he served as a director of Sandy Spring Bancorp, Inc. (NASDAQ: SASR).

After successive 4-year appointments by Virginia Governors Mark Warner and Tim Kaine, Mr. Reeder served seven years as Chairman of two Commonwealth of Virginia military boards, and 10 years on the USO Board of Governors. Mr. Reeder was appointed by Governor Terry McAuliffe to the Virginia Military Institute's Board of Visitors (2014) and reappointed in 2018 by former Virginia Governor Ralph Northam. Mr. Reeder, who has been a television commentator on legal and national security issues, has consistently been named a Super Lawyer for Washington, D.C., most recently in 2021.

In May 2018 Mr. Reeder was appointed to the Advisory Council Bid Protest Committee to the United States Court of Federal Claims.

A West Point graduate who served in the 82nd Airborne Division after Ranger School, Mr. Reeder earned his J.D. from the University of Texas, and L.L.M. from Georgetown University.

Mr. Reeder's career has focused on solving and overseeing solutions to complex domestic and international issues. This experience has enhanced the Board's ability to address major challenges in the nuclear market, as well as day-to-day corporate challenges, which is why the Board values his service as a director.

Mr. Larry M. Shelton

Mr. Shelton, a director since July 2006, has also held the position of Chairman of the Board of the Company since December 2014. Mr. Shelton served as the CFO of S K Hart Management, LLC, a private investment management company ("S K Hart Management"), from 1999 until August 2018. Mr. Shelton served as President of Pony Express Land Development, Inc. (an affiliate of SK Hart Management), a privately held land development company, from January 2013 until August 2017, and has served on its board since December 2005. Mr. Shelton served as Director and CFO of S K Hart Ranches (PTY) Ltd, a private South African Company involved in agriculture, from March 2012 to March 2020. Mr. Shelton continues to provide advisory services to S K Hart Ranches (PTY) Ltd. Mr. Shelton has over 20 years of experience as an executive financial officer for several waste management companies, including as CFO of Envirocare of Utah, Inc. (now EnergySolutions, Inc. (1995–1999)), a privately held nuclear waste services company, and as CFO of USPCI, Inc. (1982–1987), then a NYSE- listed public company engaged in the hazardous waste business. Since July 1989, Mr. Shelton has served on the board of Subsurface Technologies, Inc., a privately held company specializing in providing environmentally sound innovative solutions for water well rehabilitation and development. Mr. Shelton has a B.A. in accounting from the University of Oklahoma.

With his years of accounting experience as CFO for various companies, including a number of waste management companies, Mr. Shelton combines extensive industry knowledge and understanding of accounting principles, financial reporting requirements, evaluating and overseeing financial reporting processes and business matters. These factors led the Board to conclude that he should serve as a director.

The Honorable Zach P. Wamp

Mr. Wamp, a director since January 2018, is currently the President of Zach Wamp Consulting, a position he has held since 2011. As the President and owner of Zach Wamp Consulting, he has served some of the most prominent companies from Silicon Valley to Wall Street as a business development consultant and advisor. From September 2013 to November 2017, Mr. Wamp chaired the Board of Directors for Chicago Bridge and Iron Federal Services, LLC (a subsidiary of Chicago Bridge & Iron Company, NYSE: CBI, which provides critical services primarily to the U.S. government). From January 1995 to January 2011, Mr. Wamp served as a member of the U.S. House of Representatives from Tennessee's 3rd Congressional District. Among his many accomplishments, which included various leadership roles in the advancement of education and science, Mr. Wamp was instrumental in the formation and success of the Tennessee Valley Technology Corridor, which created thousands of jobs for Tennesseans in the areas of high-tech research, development, and manufacturing. During his career in the political arena, Mr. Wamp served on several

prominent subcommittees during his 14 years on the House Appropriations Committee, including serving as a "ranking member" of the Subcommittee on Military Construction and Veterans Affairs and Related Agencies. Mr. Wamp has been a regular panelist on numerous media outlets and has been featured in a number of national publications effectively articulating sound social and economic policy. Mr. Wamp's business career has also included work in the real estate sector for a number of years as a licensed industrial-commercial real estate broker, for which he was named Chattanooga's Small Business Person of the Year. He is a founder and Board Chair of Learning Blade, the nation's premiere STEM education platform, which is now operating in six states with deployment in another 10 states. Learning Blade is owned and operated by SAI Interactive, Inc., d/b/a Thinking Media, a privately-held educational products and services company.

Mr. Wamp has an extensive career in solving and overseeing solutions to complex issues involving domestic concerns. In addition, his wide-ranging career, particularly with respect to his government-related work, provides solid experience for the continuing growth of the Company's Treatment and Services Segments. His extensive knowledge and problem-solving expertise enhance the Board's ability to address significant challenges in the nuclear market, and led the Board to conclude that he should serve as a director.

Mr. Mark A. Zwecker

Mr. Zwecker, a director since the Company's inception in January 1991, previously served as the CFO and a board member for JCI US Inc. from 2013 to 2019. JCI US Inc. is a telecommunications company and wholly-owned subsidiary of Japan Communications, Inc. (Tokyo Stock Exchange (Securities Code: 9424)), which provides cellular service for M2M (machine to machine) applications. From 2006 to 2013, Mr. Zwecker served as Director of Finance for Communications Security and Compliance Technologies, Inc., a wholly-owned subsidiary of JCI US Inc. that develops security software products for the mobile workforce. Mr. Zwecker has held various other senior management positions, including President of ACI Technology, LLC, a privately-held IT services provider, and Vice President of Finance and Administration for American Combustion, Inc., a privately-held combustion technology solutions provider. In 1981, with Dr. Centofanti, Mr. Zwecker co-founded a start-up, PPM, Inc., a hazardous waste management company. He remained with PPM, Inc. until its acquisition in 1985 by USPCI. Mr. Zwecker has a B.S. in Industrial and Systems Engineering from the Georgia Institute of Technology and an M.B.A. from Harvard University.

As a director since our inception, Mr. Zwecker's understanding of our business provides valuable insight to the Board. With years of experience in operations and finance for various companies, including a number of waste management companies, Mr. Zwecker combines extensive knowledge of accounting principles, financial reporting rules and regulations, the ability to evaluate financial results, and understanding of financial reporting processes. He has an extensive background in operating complex organizations. Mr. Zwecker's experience and background position him well to serve as a member of our Board. These factors led the Board to conclude that he should serve as a director.

BOARD LEADERSHIP STRUCTURE

We continue to separate the roles of Chairman of the Board and CEO. The Board believes that this leadership structure promotes balance between the Board's independent authority to oversee our business, and the CEO and his management team, who manage the business on a day-to-day basis.

The Company does not have a written policy with respect to the separation of the positions of Chairman of the Board and CEO. The Company believes it is important to retain its flexibility to allocate the responsibilities of the offices of the Chairman and CEO in any way that is in the best interests of the Company at a given point in time; therefore, the Company's leadership structure may change in the future as circumstances may dictate.

Mr. Mark Zwecker, a current member of our Board, continues to serve as the Independent Lead Director, a position he has held since February 2010. The Lead Director's role includes:

- convening and chairing meetings of the non-employee directors as necessary from time to time and Board meetings in the absence of the Chairman of the Board;

- acting as liaison between directors, committee chairs and management;
- serving as information sources for directors and management; and
- carrying out such responsibilities as the Board may delegate from time to time.

AUDIT COMMITTEE
We have a separately designated standing Audit Committee of our Board established in accordance with Section 3(a)(58)(A) of the Exchange Act. Members of the Audit Committee are Mark A. Zwecker (Chairperson), Larry M. Shelton, and Joseph T. Grumski.

Our Board has determined that each of our Audit Committee members is and was independent within the meaning of the rules of the NASDAQ and is an "audit committee financial expert" as defined by Item 407(d)(5)(ii) of Regulation S-K of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

The Audit Committee has also discussed with Grant Thornton, LLP, the Company's independent registered accounting firm, the matters required to be discussed by Public Company Accounting Oversight Board ("PCAOB") Auditing Standard No. 16 (Communications with Audit Committee).

BOARD OF DIRECTOR INDEPENDENCE
The Board has determined that each director, other than Dr. Centofanti, is "independent" within the meaning of the applicable NASDAQ rules. Dr. Centofanti is not deemed to be an "independent director" because of his employment as an executive officer of the Company.

COMPENSATION AND STOCK OPTION COMMITTEE
The Compensation and Stock Option Committee (the "Compensation Committee") reviews and recommends to the Board the compensation and benefits of all of the Company's officers and reviews general policy matters relating to compensation and benefits of the Company's employees. The Compensation Committee also administers the Company's stock option plans. The Compensation Committee has the sole authority to retain and terminate a compensation consultant, as well as to approve the consultant's fees and other terms of engagement. It also has the authority to obtain advice and assistance from internal or external legal, accounting or other advisors. No compensation consultant was employed during 2021. Members of the Compensation Committee during 2021 were Joseph T. Grumski (Chairperson), who replaced Larry M. Shelton as the Chairperson and a member effective January 21, 2021, Zach P. Wamp, who replaced Joe R. Reeder as a member effective January 21, 2021, and Mark A. Zwecker. None of the members of the Compensation Committee has been or is an officer or employee of the Company or has had or has any relationship with the Company requiring disclosure under applicable Commission regulations.

CORPORATE GOVERNANCE AND NOMINATING COMMITTEE
We have a separately-designated standing Corporate Governance and Nominating Committee (the "Nominating Committee"). Members of the Nominating Committee during 2021 were Joe R. Reeder (Chairperson), Zach P. Wamp, Kerry C. Duggan (who became a member effective July 20, 2021) and Thomas Bostick, who replaced Larry M. Shelton as a member effective January 21, 2021. All members of the Nominating Committee are and were "independent" as that term is defined by current NASDAQ listing standards.

The Nominating Committee recommends to the Board candidates to fill vacancies on the Board and the nominees for election as directors at each annual meeting of stockholders. In making such recommendation, the Nominating Committee takes into account information provided to them from the candidate, as well as the Nominating Committee's own knowledge and information obtained through inquiries to third parties to the extent the Nominating Committee deems appropriate. The Company's Bylaws sets forth certain minimum director qualifications to qualify for nomination for election as a director. To qualify for nomination or for election as a director, an individual must:

- be an individual at least 21 years of age who is not under legal disability;
- have the ability to be present, in person, at all regular and special meetings of the Board of Directors;

- not serve on the boards of more than three other publicly-held companies;
- satisfy the director qualification requirements of all environmental and nuclear commissions, boards or similar regulatory or law enforcement authorities to which the Company is subject so as not to cause the Company to fail to satisfy any of the licensing requirements imposed by any such authority;
- not be affiliated with, employed by or a representative of, or have or acquire a material personal involvement with, or material financial interest in, any “Business Competitor” (as defined in the Bylaws);
- not have been convicted of a felony or of any misdemeanor involving moral turpitude; and
- have been nominated for election to the Board of Directors in accordance with the terms of the Bylaws.

In addition to the minimum director qualifications as mentioned above, in order for any proposed nominee to be eligible to be a candidate for election to the Board, such candidate must deliver to the Nominating Committee a completed questionnaire with respect to the background, qualifications, stock ownership and independence of such proposed nominee. The Nominating Committee reviews each candidate’s qualifications to include considerations of:

- standards of integrity, personal ethics and values, commitment, and independence of thought and judgment;
- ability to represent the interests of the Company’s stockholders;
- ability to dedicate sufficient time, energy, and attention to fulfill the requirements of the position; and
- diversity of skills and experience with respect to accounting and finance, management and leadership, business acumen, vision and strategy, charitable causes, business operations, and industry knowledge.

The Nominating Committee does not assign specific weight to any particular criteria and no particular criterion is necessarily applicable to all prospective nominees. The Nominating Committee does not have a formal policy for the consideration of diversity in identifying nominees for directors. However, diversity is one of the many factors taken into account when considering potential candidates to serve on the Board of Directors. The Company generally views and values diversity from the perspective of professional and life experiences, as well as geographic location, representative of the markets in which we do business. The Company recognizes that diversity in professional and life experiences may include consideration of gender, race, cultural background or national origin, in identifying individuals who possess the qualifications that the Nominating Committee believes are important to be represented on the Board. The Company believes that the inclusion of diversity as one of many factors considered in selecting director nominees is consistent with the Company's goal of creating a board of directors that best serves our needs and those of our shareholders.

Stockholder Nominees

The Nominating Committee will consider properly submitted stockholder nominations for candidates for membership on the Board from stockholders who meet each of the requirements set forth in the Bylaws, including, but not limited to, the requirements that any such stockholder own at least 1% of the Company’s shares of the Common Stock entitled to vote at the meeting on such election, has held such shares continuously for at least one full year, and continuously holds such shares through and including the time of the annual or special meeting. Nominations of persons for election to the Board of Directors may be made at any Annual Meeting of Stockholders, or at any Special Meeting of Stockholders called for the purpose of electing directors. Any stockholder nomination (“Proposed Nominee”) must comply with the requirements of the Company’s Bylaws and the Proposed Nominee must meet the minimum qualification requirements as discussed above. For a nomination to be made by a stockholder, such stockholder must provide advance written notice to the Nominating Committee, delivered to the Company’s principal executive office address (i) in the case of an Annual Meeting of Stockholders, no later than the 90th day nor earlier than the 120th day prior to the anniversary date of the immediately preceding Annual Meeting of Stockholders; and (ii) in the case of a Special Meeting of Stockholders called for the purpose of electing directors, not later than the 10th

day following the day on which public disclosure of the date of the Special Meeting of Stockholders is made.

The Nominating Committee will evaluate the qualification of the Proposed Nominee and the Proposed Nominee's disclosure and compliance requirements in accordance with the Company's Bylaws. If the Board of Directors, upon the recommendation of the Nominating Committee, determines that a nomination was not made in accordance with the Company's Bylaws, the Chairman of the Meeting shall declare the nomination defective and it will be disregarded.

STRATEGIC ADVISORY COMMITTEE

We have a separately designated Strategic Advisory Committee (the "Strategic Committee"). The primary functions of the Strategic Committee are to investigate and evaluate strategic alternatives available to the Company and to work with management on long-range strategic planning and identification of potential new business opportunities. The members of the Strategic Advisory Committee are Dr. Louis Centofanti (Chairperson), Joe R. Reeder, Mark A. Zwecker, and Kerry Duggan, who replaced Larry M. Shelton as a member effective July 20, 2021.

The Board has adopted a written charter for each of the Audit Committee, the Compensation Committee, the Nominating Committee, and the Strategic Advisory Committee, and is available on our website at www.perma-fix.com.

EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth, as of the date hereof, information concerning our executive officers:

NAME	AGE	POSITION
Mr. Mark Duff	59	President and CEO
Mr. Ben Naccarato	59	CFO, EVP, and Secretary
Dr. Louis Centofanti	78	EVP of Strategic Initiatives
Mr. Andrew Lombardo	62	EVP of Nuclear and Technical Services
Mr. Richard Grondin	63	EVP of Waste Treatment Operations

Mr. Mark Duff

Mr. Mark Duff has held the position of President and CEO of the Company since September 2017. Since joining the Company in June 2016 and prior to being named the President and CEO, Mr. Duff held the positions of COO and EVP of the Company. Since joining Perma-Fix, Mr. Duff has developed and implemented strategies to meet aggressive growth objectives in both the Treatment and Services Segments. In the Treatment Segment, he continues to upgrade each facility to increase efficiency and modernize treatment capabilities to meet the changing markets associated with the waste management industry. In the Services Segment, which encompasses all field operations, he has completed the revitalization of business development programs which has resulted in increased competitive procurement effectiveness and broadened the market penetration within both the commercial and government sectors. These implemented strategies have contributed to continuous growth in revenues and profitability. Mr. Duff has over 31 years of management and technical experience in the U.S. DOE and U.S. DOD environmental and construction markets as a corporate officer, senior project manager, co-founder of a consulting firm, and federal employee. Mr. Duff has an MBA from the University of Phoenix and received his B.S. from the University of Alabama.

Mr. Ben Naccarato

Mr. Naccarato has served as the Company's CFO since February 2009. Since joining the Company in September 2004, Mr. Naccarato has held the positions of Vice President of Finance for the Company's Industrial Segment and Vice President, Corporate Controller/Treasurer. Mr. Naccarato has over 34 years of experience in senior financial positions in the waste management and used oil industries. From December 2002 to September 2004, Mr. Naccarato was the CFO of a privately held company in the fuel distribution and used waste oil industry. Mr. Naccarato is a graduate of University of Toronto with a Bachelor of Commerce and Finance Degree and is a Chartered Professional Accountant, Certified Management

Accountant (CPA, CMA).

On March 3, 2021, Mr. Naccarato was appointed to serve as an independent director of PyroGenesis Canada, Inc., a high-tech company involved in the design, development, manufacture and commercialization of advanced plasma processes and products and whose stock is listed for trading on the Toronto (PYR) and NASDAQ (PYR) Stock Exchange. Effective March 11, 2021, Mr. Naccarato was appointed to serve as a member of both the Audit and Compensation Committee of PyroGenesis.

Dr. Louis Centofanti
See "Director – Dr. Louis F. Centofanti" in this section for information on Dr. Centofanti.

Mr. Andrew ("Andy") Lombardo
Mr. Lombardo has held the position of EVP of Nuclear and Technical Services since January 2020. Since joining the Company in 2011, Mr. Lombardo has held various positions within the Company's Services Segment, including SVP of Nuclear and Technical Services.

Mr. Lombardo, a Certified Health Physicist ("CHP"), has over 39 years of management and technical experience in the commercial nuclear reactor market, and the DOE and DOD environmental and construction markets as a senior director, senior project manager, senior CHP and chemist. Prior to joining the Company, Mr. Lombardo held the position of Vice President of Technical Services for Safety and Ecology Corporation ("SEC"), a subsidiary of Homeland Security Capital Corporation, a publicly traded environmental services company, prior to the acquisition of SEC by the Company in 2011. In his positions with both the Company and SEC, Mr. Lombardo procured and performed greater than $30 million a year in health physics and radioactive material management projects across the DOE and DOD complex while managing a professional staff of engineers and health physicists and an instrumentation laboratory. Among his many accomplishments, Mr. Lombardo has developed an expertise characterizing and managing naturally occurring radioactive material ("NORM") and technologically enhanced NORM ("TENORM") waste streams across multiple industries including oil and gas exploration and production. As a result of his expertise, he was appointed to a scientific committee of the National Council on Radiation Protection and Measurement to provide a commentary on the generation and disposal of TENORM waste. Mr. Lombardo began his career as a chemist and health physicist for the Duquesne Light Company at two commercial reactor sites and one joint DOE/Naval Reactors Duquesne Light test reactor in Shippingport, PA. Mr. Lombardo is certified in comprehensive practice of health physics, and has a M.S. degree in Health Physics from the University of Pittsburgh and a B.S. in Natural Sciences from Indiana University of Pennsylvania.

Mr. Richard Grondin
Mr. Grondin has held the position of EVP of Waste Treatment Operations since July 2020. Since joining the Company in 2002, Mr. Grondin has held various positions within the Company's Treatment Segment, including Vice President of Technical Services, Vice President/General Manager of the Perma-Fix Northwest Richland, Inc. Facility and Vice President of Western Operations. Mr. Grondin, a Project Management Professional, has over 35 years of management and technical experience in the highly regulated and specialized radioactive/hazardous waste management industry with the majority of his experience concentrated on managing start-up waste management processing and disposal facilities for four different organizations in the commercial and government sectors. Prior to joining the Company, Mr. Grondin held the position of Vice President of Mixed Waste Operations for Allied Technology Group in Richland, Washington; Vice President of Operations for Waste Control Specialists in Andrews Texas; and Technical Manager/Director of Operations for Rollins Environmental Services Facility in Deer Trail, Colorado. Mr. Grondin is recognized in the United States and Canada as an authority in hazardous and mixed waste treatment. Mr. Grondin has a Diploma of Collegial Studies in Pure and Applied Sciences from CEGEP of Amiante (Thetford-Mines, Canada) and Analytical Chemistry Techniques from CEGEP of Ahuntsic (Montreal, Canada), a Geography minor from Montreal University (Montreal, Canada) and a Certificate of Business Management from the School of Higher Commercial Studies from Montreal University (Montreal, Canada).

Certain Relationships
There are no family relationships between any of the directors or executive officers.

Section 16(a) Beneficial Ownership Reporting Compliance
Section 16(a) of the Exchange Act, and the regulations promulgated thereunder require our executive officers and directors and beneficial owners of more than 10% of our Common Stock to file reports of ownership and changes of ownership of our Common Stock with the Commission, and to furnish us with copies of all such reports. Based solely on a review of the copies of such reports furnished to us and written information provided to us, we believe that during 2021 none of our executive officers, directors, or beneficial owners of more than 10% of our Common Stock failed to timely file reports under Section 16(a).

Schelhammer Capital Bank AG (formerly known as Capital Bank-Grawe Gruppe AG) has advised us that it is a banking institution regulated by the banking regulations of Austria, which holds shares of our Common Stock as agent on behalf of numerous investors. Schelhammer Capital Bank AG has represented that all of such investors are accredited investors under Rule 501 of Regulation D promulgated under the Act. In addition, Schelhammer Capital Bank AG has advised us that none of such investors, individually or as a group, beneficially own more than 4.9% of our Common Stock as calculated in accordance with Rule 13d-3 of the Exchange Act. Schelhammer Capital Bank AG has further informed us that its clients (and not Schelhammer Capital Bank AG) maintain full voting and dispositive power over such shares. Consequently, Schelhammer Capital Bank AG has advised us that it believes it is not the beneficial owner, as such term is defined in Rule 13d-3 of the Exchange Act, of the shares of our Common Stock registered in the name of Schelhammer Capital Bank AG because it has neither voting nor investment power, as such terms are defined in Rule 13d-3, over such shares. Schelhammer Capital Bank AG has informed us that it does not believe that it is required to file, and has not filed, (a) reports under Section 16(a) of the Exchange Act or (b) either Schedule 13D or Schedule 13G in connection with the shares of our Common Stock registered in the name of Schelhammer Capital Bank AG.

If the representations of, or information provided by Schelhammer Capital Bank AG, are incorrect or Schelhammer Capital Bank AG was historically acting on behalf of its investors as a group, rather than on behalf of each investor independent of other investors, then Schelhammer Capital Bank AG and/or the investor group would have become a beneficial owner of more than 10% of our Common Stock on February 9, 1996, as a result of the acquisition of 1,100 shares of our Preferred Stock that were convertible into a maximum of 256,560 shares of our Common Stock. If either Schelhammer Capital Bank AG or a group of Schelhammer Capital Bank AG's investors became a beneficial owner of more than 10% of our Common Stock on February 9, 1996, or at any time thereafter, and thereby required to file reports under Section 16(a) of the Exchange Act, then Schelhammer Capital Bank AG has failed to file a Form 3 or any Forms 4 or 5 since February 9, 1996. (See "Item 12 - Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matter – Security Ownership of Certain Beneficial Owners" for a discussion of Schelhammer Capital Bank AG's current record ownership of our securities).

Code of Ethics
Our Code of Ethics applies to all our executive officers and is available on our website at www.perma-fix.com. If any amendments are made to the Code of Ethics or any grants of waivers are made to any provision of the Code of Ethics to any of our executive officers, we will promptly disclose the amendment or waiver and nature of such amendment or waiver on our website at the same web address.

ITEM 11. EXECUTIVE COMPENSATION

Summary Compensation
The following table summarizes the total compensation paid or earned by each of the named executive officers ("NEOs") for the fiscal years ended December 31, 2021 and 2020.

Name and Principal Position	Year	Salary	Bonus	Option Awards	Non-Equity Incentive Plan Compensation	All other Compensation	Total Compensation
		($)	($)	($) (2)	($)	($) (4)	($)
Mark Duff	2021	350,341	—	175,518	—	37,121	562,980
President and CEO	2020	344,400	27,000 (1)	—	107,010 (3)	29,930	508,340
Ben Naccarato	2021	284,830	—	87,759	—	45,440	418,029
EVP and CFO	2020	280,000	—	—	86,000 (3)	41,594	407,594
Dr. Louis Centofanti	2021	237,361	—	70,207	—	35,836	343,404
EVP of Strategic Initiatives	2020	233,336	—	—	71,668 (3)	33,780	338,784
Andy Lombardo	2021	284,830	—	87,759	—	15,500	388,089
EVP of Nuclear & Technical Services	2020	280,000	27,000 (1)	—	83,000 (3)	12,385	402,385
Richard Grondin	2021	244,140	—	87,759	—	33,943	365,842
EVP of Waste Treatment Operations	2020	223,151	—	—	71,143 (3)	29,216	323,510

(1) Reflects a discretionary bonus earned by the executive for fiscal year 2020 which was approved by the Company's Compensation Committee and which was paid in July 2021.

(2) Reflects the aggregate grant date fair value of awards computed in accordance with ASC 718, "Compensation – Stock Compensation." Assumptions used in the calculation of this amount are included in "Note 6 – Capital Stock, Stock Plans, Warrants and Stock Based Compensation" to "Notes to Consolidated Financial Statement."

(3) Represents performance compensation earned under the Company's 2020 Management Incentive Plan ("MIP") which was paid in July 2021.

(4) The amount shown includes a monthly automobile allowance, insurance premiums (health, disability and life) paid by the Company on behalf of the NEO, and 401(k) matching contributions.

Name		Insurance Premium		Auto Allowance		401(k) match		Total
Mark Duff	$	21,621	$	9,000	$	6,500	$	37,121
Ben Naccarato	$	29,940	$	9,000	$	6,500	$	45,440
Dr. Louis Centofanti	$	20,658	$	9,000	$	6,178	$	35,836
Andy Lombardo	$	—	$	9,000	$	6,500	$	15,500
Richard Grondin	$	20,658	$	6,785	$	6,500	$	33,943

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth unexercised options held by the NEOs as of the fiscal year-end.

Outstanding Equity Awards at December 31, 2021

	Option Awards						
Name	Number of Securities Underlying Unexercised Options (#) Exercisable		Number of Securities Underlying Unexercised Options (#) [1] Unexercisable		Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price ($)	Option Expiration Date
Mark Duff	50,000	[2]	—	[2]	—	3.970	5/15/2022
	80,000	[3]	20,000	[3]	—	3.650	7/27/2023
	10,000	[4]	15,000	[4]		3.150	1/17/2025
	—	[6]	50,000	[6]		7.005	10/14/2027
Ben Naccarato	40,000	[3]	10,000	[3]	—	3.650	7/27/2023
	6,000	[4]	9,000	[4]		3.150	1/17/2025
	—	[6]	25,000	[6]		7.005	10/14/2027
Dr. Louis Centofanti	40,000	[3]	10,000	[3]	—	3.650	7/27/2023
	6,000	[4]	9,000	[4]		3.150	1/17/2025
	—	[6]	20,000	[6]		7.005	10/14/2027
Andy Lombardo	8,000	[5]	4,000	[5]	—	3.600	10/19/2023
	2,000	[4]	6,000	[4]		3.150	1/17/2025
	—	[6]	25,000	[6]		7.005	10/14/2027
Richard Grondin	16,000	[5]	4,000	[5]	—	3.600	10/19/2023
	4,000	[4]	6,000	[4]		3.150	1/17/2025
	—	[6]	25,000	[6]		7.005	10/14/2027

[1] Pursuant to each of the employment agreements between the Company and, respectively, Mark Duff, Ben Naccarato, Dr. Louis Centofanti, Andy Lombardo, and Richard Grondin, each dated July 22, 2020, in the event of a change in control, death of the executive officer, the executive officer terminates his employment for "good reason" or the executive officer is terminated by the Company without cause, each outstanding option and award shall immediately become exercisable in full (see "Employment Agreements" below for further discussion of the events pursuant to which accelerated exercise of the respective NEO's outstanding options can arise).

[2] Incentive stock option granted on May 15, 2016 under the Company's 2010 Stock Option Plan. The option has a contractual term of six years with one-third yearly vesting over a three-year period.

[3] Incentive stock option granted on July 27, 2017 under the Company's 2017 Stock Option Plan. The option has a contractual term of six years with one-fifth yearly vesting over a five-year period.

[4] Incentive stock option granted on January 17, 2019 under the Company's 2017 Stock Option Plan. The option has a contractual term of six years with one-fifth yearly vesting over a five-year period.

[5] Incentive stock option granted on October 19, 2017 under the Company's 2017 Stock Option Plan. The option has a contractual term of six years with one-fifth yearly vesting over a five-year period.

[6] Incentive stock option granted on October 14, 2021under the Company's 2017 Stock Option Plan. The option has a contractual term of six years with one-fifth yearly vesting over a five-year period.

Option Exercises

None of the Company's NEOs exercised options in 2021.

Employment Agreements

Each of the NEOs entered into an employment agreement with the Company dated July 22, 2020 (each, an "Employment Agreement" and, collectively, the "Employment Agreements"). Each of the Employment Agreements, which are substantially identical, provides for a specified annual base salary, which annual salary may be increased from time to time, but not reduced, as determined by the Compensation Committee. In addition, each of the NEOs is entitled to participate in the Company's broad-based benefits plans and to

certain performance compensation payable under separate MIPs as approved by the Company's Compensation Committee and Board. The Company's Compensation Committee and the Board approved individual 2021 MIPs on January 21, 2021 (which were effective January 1, 2021 and applicable for the 2021 fiscal year) for each of the executive officers (see discussion of each of the 2021 MIPs below under "2021 MIPs").

Each of the Employment Agreements is effective for three years from July 22, 2020 (the "Initial Term") unless earlier terminated by the Company or by the respective NEO. At the end of the Initial Term of each Employment Agreement, each Employment Agreement will automatically be extended for one additional year, unless at least six months prior to the expiration of the Initial Term, the Company or the respective NEO provides written notice not to extend the terms of the Employment Agreement.

Each of the Employment Agreements provides that, if an NEO's employment is terminated due to death/disability or for cause (as defined in the agreements), the Company will pay to the NEO or to his estate an amount equal to the sum of any unpaid base salary, accrued unused vacation time through the date of termination, any benefits due to the NEO under any employee benefit plan (the "Accrued Amounts") and any performance compensation payable pursuant to the MIP applicable to such NEO.

If the NEO terminates his employment for "good reason" (as defined in the agreements) or is terminated by the Company without cause (including any such termination for "good reason" or without cause within 24 months after a Change in Control (as defined in the agreements), the Company will pay the NEO the Accrued Amounts, two years of full base salary, and two times the performance compensation (under the NEO's MIP) earned with respect to the fiscal year immediately preceding the date of termination provided the performance compensation earned with respect to the fiscal year immediately preceding the date of termination has not yet been paid. If performance compensation earned with respect to the fiscal year immediately preceding the date of termination has been paid to the NEO, the NEO will be paid an additional year of the performance compensation earned with respect to the fiscal year immediately preceding the date of termination. If the NEO terminates his employment for a reason other than for good reason, the Company will pay to the executive an amount equal to the Accrued Amounts plus any performance compensation payable pursuant to the MIP applicable to such NEO.

If there is a Change in Control (as defined in the agreements), all outstanding stock options to purchase the common stock held by the NEO will immediately become exercisable in full commencing on the date of termination through the original term of the options. In the event of the death of an NEO, all outstanding stock options to purchase common stock held by the NEO will immediately become exercisable in full commencing on the date of death, with such options exercisable for the lesser of the original option term or twelve months from the date of the NEO's death. In the event an NEO terminates his employment for "good reason" or is terminated by the Company without cause, all outstanding stock options to purchase common stock held by the NEO will immediately become exercisable in full commencing on the date of termination, with such options exercisable for the lesser of the original option term or within 60 days from the date of the NEO's date of termination. Severance benefits payable with respect to a termination (other than Accrued Amounts) shall not be payable until the termination constitutes a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h)).

Potential Payments Upon Termination or Change in Control

The following table sets forth the potential (estimated) payments and benefits to which each NEO would be entitled upon termination of employment by the NEO for "good reason" or by the Company "without cause," or following a Change in Control of the Company, as specified under each of their respective Employment Agreements with the Company, assuming each circumstance described below occurred on December 31, 2021, the last day of our most recent fiscal year. Such potential payments include any Accrued Amounts (accrued base salary earned for 2021 but paid in 2022, as well as accrued unused vacation/sick time and other vested benefits under the Company plans in which he/she participates). The NEO is not entitled to payment of any benefits upon termination for cause or resignation without good reason other than for Accrued Amounts.

Name and Principal Position Potential Payment/Benefit		Good Reason or by Company Without Cause			Change in Control of the Company	
Mark Duff						
President and CEO						
Base salary and Accrued Amounts	$	717,121	(1)	$	717,121	(1)
Performance compensation	$	—	(2)	$	—	(2)
Stock Options	$	465,500	(3)	$	465,500	(3)
Ben Naccarato						
EVP and CFO						
Base salary and Accrued Amounts	$	617,044	(1)	$	617,044	(1)
Performance compensation	$	—	(2)	$	—	(2)
Stock Options	$	181,700	(3)	$	181,700	(3)
Dr. Louis Centofanti						
EVP of Strategic Initiatives						
Base salary and Accrued Amounts	$	624,380	(1)	$	624,380	(1)
Performance compensation	$	—	(2)	$	—	(2)
Stock Options	$	181,700	(3)	$	181,700	(3)
Andy Lombardo						
EVP of Nuclear and Technical Services						
Base salary and Accrued Amounts	$	591,222	(1)	$	591,222	(1)
Performance compensation	$	—	(2)	$	—	(2)
Stock Options	$	58,200	(3)	$	58,200	(3)
Richard Grondin						
EVP of Waste Treatment Operations						
Base salary and Accrued Amounts	$	569,218	(1)	$	569,218	(1)
Performance compensation	$	—	(2)	$	—	(2)
Stock Options	$	86,400	(3)	$	86,400	(3)

(1) Represents two times the base salary of the NEO at December 31, 2021 plus "Accrued Amounts."

(2) Represents two times the performance compensation earned for fiscal year 2021 which was $0 (see "2021 MIPs" below).

(3) Benefit is calculated based on the difference between the exercise price of each option and the market value of the Company's Common Stock per share (as reported on the NASDAQ) at December 31, 2021 times the number of options outstanding at December 31, 2021. Benefit excludes options which were out-of-the-money at December 31, 2021.

2021 Executive Compensation Components

For the fiscal year ended December 31, 2021, the principal components of compensation for executive officers were:

- base salary;
- performance-based incentive compensation;
- long term incentive compensation;
- retirement and other benefits; and
- perquisites.

Based on the amounts set forth in the Summary Compensation table, during 2021, salary accounted for approximately 67.4% of the total compensation of our NEOs, while equity option awards, MIP compensation, and other compensation accounted for approximately 32.6% of the total compensation of the NEOs.

Base Salary

The NEOs, other officers, and other employees of the Company receive a base annual salary. Base salary ranges for executive officers are determined for each executive based on his or her position and responsibility by using market data and comparisons to similar companies within the business segments in which the Company operates.

During its review of base salaries for executives, the Compensation Committee primarily considers:

- market data and comparisons to similar companies within the business segments in which the Company operates;
- internal review of the executive's compensation, both individually and relative to other officers; and
- individual performance of the executive.

Salary levels are typically considered annually as part of the performance review process as well as upon a promotion or other change in job responsibility. Merit-based salary increases for executives are based on the Compensation Committee's assessment of the individual's performance. The base salary and potential annual base salary adjustments for the NEOs are set forth in their respective employment agreements. On January 20, 2022, the Compensation Committee and the Board approved a cost of living increase of 6.4% to each NEO's annual base salary, effective January 1, 2022. Such increase was reflected in each of the 2022 MIPs as described below.

Performance-Based Incentive Compensation

The Compensation Committee has the latitude to design cash and equity-based incentive compensation programs to promote high performance and achievement of our corporate objectives by directors and the NEOs, encourage the growth of stockholder value and enable employees to participate in our long-term growth and profitability. The Compensation Committee may grant stock options and/or performance bonuses. In granting these awards, the Compensation Committee may establish any conditions or restrictions it deems appropriate. In addition, the CEO has discretionary authority to grant stock options to certain high-performing executives or officers, subject to the approval of the Compensation Committee. The exercise price for each stock option granted is at or above the market price of our Common Stock on the date of grant. Stock options may be awarded to newly hired or promoted executives at the discretion of the Compensation Committee. Grants of stock options to eligible newly hired executive officers are generally made at the next regularly scheduled Compensation Committee meeting following the hire date.

2021 MIPs

On January 21, 2021, the Compensation Committee and the Board approved individual MIP for the calendar year 2021 for each of the Company's NEOs. Each of the MIPs was effective January 1, 2021 and applicable for the 2021 fiscal year. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification.

The performance compensation payable under each MIP was based upon meeting certain of the Company's separate target objectives during 2021 as described in each of the MIPs below. The Compensation Committee believe performance compensation payable under each of the MIPs should be based on achievement of an EBITDA (earnings before interest, taxes, depreciation and amortization) target, a non-GAAP ("Generally Accepted Accounting Principles") financial measurement, as the Company believes that this target provides a better indicator of operating performance as it excludes certain non-cash items. EBITDA has certain limitations as it does not reflect all items of income or cash flows that affect the Company's financial performance under GAAP.

Certain targets set forth in each of 2021 MIPs took into account the Board-approved budget for 2021 as well as the Compensation Committee's expectation for performance that in its estimation would warrant payment of incentive cash compensation. In formulating certain targets, the Compensation Committee and the Board considered 2020 results, economic conditions, potential continued impact of COVID-19 and forecasts for 2021 government spending.

Performance compensation, if any, was to be paid on or about 90 days after year-end, or sooner, based on final Form 10-K filing. The Compensation Committee retained the right to modify, change or terminate each MIP and may adjust the various target amounts described below, at any time and for any reason.

The total performance compensation that was to be paid to the NEOs under the MIPs was not to exceed 50% of the Company's pre-tax net income prior to the calculation of performance compensation.

The following schedules reflect performance compensation payable under each of the MIPs, along with descriptions of the target objectives. No performance compensation was earned under any of the MIPs for 2021. In February 2021, the Compensation Committee approved a cost of living increase of 2.3% to each NEO's annual base salary, effective April 1, 2021. This increase was not reflected in the annualize base pay below for each of the 2021 MIPs as approved on January 21, 2021:

CEO MIP:

Annualized Base Pay:	$344,400
Performance Incentive Compensation Target (at 100% of Plan):	$172,200
Total Annual Target Compensation (at 100% of Plan):	$516,600

Perma-Fix Environmental Serivces, Inc.
2021 Management Incentive Plan
CEO MIP MATRIX

Target Objectives	Performance Target Achieved					
	60%-74%	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 1,722	$ 8,610	$ 17,220	$ 29,520	$ 41,820	$ 66,420
EBITDA (2)	10,332	51,660	103,320	177,120	250,920	398,520
Health & Safety (3) (6)	2,583	12,915	25,830	25,830	25,830	25,830
Permit & License Violations (4) (6)	2,583	12,915	25,830	25,830	25,830	25,830
	$ 17,220	$ 86,100	$ 172,200	$ 258,300	$ 344,400	$ 516,600

CFO MIP:

Annualized Base Pay:	$280,000
Performance Incentive Compensation Target (at 100% of Plan):	$140,000
Total Annual Target Compensation (at 100% of Plan):	$420,000

Perma-Fix Environmental Serivces, Inc.
2021 Management Incentive Plan
CFO MIP MATRIX

Target Objectives	Performance Target Achieved					
	60%-74%	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 1,400	$ 7,000	$ 14,000	$ 23,000	$ 31,000	$ 37,000
EBITDA (2)	10,500	52,500	105,000	138,000	186,000	222,000
Health & Safety (3) (6)	1,050	5,250	10,500	10,500	10,500	10,500
Permit & License Violations (4) (6)	1,050	5,250	10,500	10,500	10,500	10,500
	$ 14,000	$ 70,000	$ 140,000	$ 182,000	$ 238,000	$ 280,000

EVP of Strategic Initiatives MIP:

Annualized Base Pay:	$233,336
Performance Incentive Compensation Target (at 100% of Plan):	$116,668
Total Annual Target Compensation (at 100% of Plan):	$350,004

Perma-Fix Environmental Serivces, Inc. 2021 Management Incentive Plan EVP OF STRATEGIC INITIATIVES MIP MATRIX						
Target Objectives	Performance Target Achieved					
	60%-74%	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 1,167	$ 5,833	$ 11,667	$ 19,167	$ 25,834	$ 30,834
EBITDA (2)	8,750	43,751	87,501	115,001	155,002	185,002
Health & Safety (3) (6)	875	4,375	8,750	8,750	8,750	8,750
Permit & License Violations (4) (6)	875	4,375	8,750	8,750	8,750	8,750
	$ 11,667	$ 58,334	$ 116,668	$ 151,668	$ 198,336	$ 233,336

<u>EVP of Waste Treatment Operations MIP:</u>

Annualized Base Pay: $240,000

Performance Incentive Compensation Target (at 100% of Plan): <u>$120,000</u>

Total Annual Target Compensation (at 100% of Plan): <u>$360,000</u>

Perma-Fix Environmental Serivces, Inc. 2021 Management Incentive Plan EVP OF WASTE TREATMENT OPERATIONS MIP MATRIX						
Target Objectives	Performance Target Achieved					
	60%-74%	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 1,200	$ 6,000	$ 12,000	$ 17,143	$ 24,000	$ 29,143
EBITDA (2)	7,200	36,000	72,000	102,857	144,000	174,857
Health & Safety (3) (6)	1,800	9,000	18,000	18,000	18,000	18,000
Permit & License Violations (4) (6)	1,800	9,000	18,000	18,000	18,000	18,000
	$ 12,000	$ 60,000	$ 120,000	$ 156,000	$ 204,000	$ 240,000

<u>EVP of Nuclear and Technical Services MIP:</u>

Annualized Base Pay: $280,000

Performance Incentive Compensation Target (at 100% of Plan): <u>$140,000</u>

Total Annual Target Compensation (at 100% of Plan): <u>$420,000</u>

Perma-Fix Environmental Serivces, Inc. 2021 Management Incentive Plan EVP OF NUCLEAR & TECHNICAL SERVICES MIP MATRIX						
Target Objective	Performance Target Achieved					
	60%-74%	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 1,400	$ 7,000	$ 14,000	$ 20,000	$ 28,000	$ 34,000
EBITDA (2)	8,400	42,000	84,000	120,000	168,000	204,000
Health & Safety (3) (6)	2,100	10,500	21,000	21,000	21,000	21,000
CPI (5) (6)	2,100	10,500	21,000	21,000	21,000	21,000
	$ 14,000	$ 70,000	$ 140,000	$ 182,000	$ 238,000	$ 280,000

(1) Revenue was defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2021 financial statements. The percentage achieved was determined by comparing the actual consolidated revenue for 2021 to the Board approved Revenue target for 2021.

(2) EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA target for 2021.

(3) The Health and Safety incentive was based upon the actual number of Worker's Compensation Lost Time Accidents in the Company's Services Segment, as provided by the Company's Worker's Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the Company's carrier or broker. Such claims were identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding performance target thresholds was established for the annual Incentive Compensation Plan calculation for 2021.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%)

(4) Permits or License Violations incentive was earned/determined according to the scale set forth below: An "official notice of non-compliance" was defined as an official communication during 2021 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which resulted in a facility's implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

(5) Cost Performance Index ("CPI" – a metric used in measuring project performance) incentive was earned/determined by maintaining project performance metrics for all Firm Fixed Price task orders and projects to include monitoring CPI based on recognized earned value calculations. As defined through monthly project reviews, all CPI metrics should exceed 1.0 for Nuclear Services Projects. A cumulative CPI ("CCPI") was calculated from all fixed cost contracts. The following CCPI and corresponding performance target thresholds were established for annual incentive compensation plan calculation for 2021.

CPI (if CCPI is)	Performance Target Achieved
<.0.60	(n/a)
0.60-0.74	60%-74%
0.75-0.89	75%-89%
0.90-1.10	90%-110%
1.11-1.29	111%-129%
1.30-1.50	130%-150%
>1.50	>150%

(6) No performance incentive compensation was payable for achieving the target objective unless a minimum of 60% of the EBITDA target objective was achieved.

2022 MIPs

On January 20, 2022, the Compensation Committee and the Board approved individual MIPs for the calendar year 2022 for each of the NEOs. Each of the MIPs was effective January 1, 2022.

The performance compensation payable under each MIP was based upon meeting certain of the Company's separate target objectives during 2022 as described in each of the MIPs below.

Certain targets set forth in each of the 2022 MIPs take into account the Board-approved budget for 2022 as well as the Compensation Committee's expectation for performance that in its estimation would warrant payment of incentive cash compensation. In formulating certain targets, the Compensation Committee and the Board considered 2021 results, economic conditions, potential continued impact of COVID-19 and forecasts for 2022 government spending.

Performance compensation amounts under the 2022 MIPs are to be paid on or about 90 days after year-end, or sooner, based on finalization of our audited financial statements for 2022.

The Compensation Committee retains the right to modify, change or terminate each MIP and may adjust the various target amounts described below, at any time and for any reason.

The total to be paid to the NEOs under the MIPs shall not exceed 50% of the Company's pre-tax net income prior to the calculation of performance compensation.

The following schedules reflect performance compensation payable under each of the MIPs, along with a description of the target objectives.

CEO MIP:

Annualized Base Pay:	$374,870
Performance Incentive Compensation Target (at 100% of Plan):	$187,435
Total Annual Target Compensation (at 100% of Plan):	$562,305

Perma-Fix Environmental Serivces, Inc. 2022 Management Incentive Plan CEO MIP MATRIX					
Target Objectives	Performance Target Achieved				
	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 9,372	$ 18,744	$ 32,132	$ 45,520	$ 72,296
EBITDA (2)	56,229	112,461	192,790	273,120	433,778
Health & Safety (3) (6)	14,058	28,115	28,115	28,115	28,115
Permit & License Violations (4) (6)	14,058	28,115	28,115	28,115	28,115
	$ 93,717	$ 187,435	$ 281,152	$ 374,870	$ 562,304

CFO MIP:

Annualized Base Pay:	$304,772
Performance Incentive Compensation Target (at 100% of Plan):	$152,386
Total Annual Target Compensation (at 100% of Plan):	$457,158

Perma-Fix Environmental Serivces, Inc. 2022 Management Incentive Plan CFO MIP MATRIX					
Target Objectives	Performance Target Achieved				
	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 7,619	$ 15,239	$ 25,035	$ 33,743	$ 40,273
EBITDA (2)	57,146	114,289	150,209	202,455	241,641
Health & Safety (3) (6)	5,714	11,429	11,429	11,429	11,429
Permit & License Violations (4) (6)	5,714	11,429	11,429	11,429	11,429
	$ 76,193	$ 152,386	$ 198,102	$ 259,056	$ 304,772

EVP of Strategic Initiatives MIP:

Annualized Base Pay:	$253,980
Performance Incentive Compensation Target (at 100% of Plan):	$126,990
Total Annual Target Compensation (at 100% of Plan):	$380,970

Perma-Fix Environmental Serivces, Inc. 2022 Management Incentive Plan EVP OF STRATEGIC INITIATIVES MIP MATRIX					
Target Objectives	Performance Target Achieved				
	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 6,350	$ 12,699	$ 20,863	$ 28,119	$ 33,562
EBITDA (2)	47,621	95,243	125,176	168,716	201,370
Health & Safety (3) (6)	4,762	9,524	9,524	9,524	9,524
Permit & License Violations (4) (6)	4,762	9,524	9,524	9,524	9,524
	$ 63,495	$ 126,990	$ 165,087	$ 215,883	$ 253,980

EVP of Waste Treatment Operations MIP:

Annualized Base Pay:	$261,233
Performance Incentive Compensation Target (at 100% of Plan):	$130,617
Total Annual Target Compensation (at 100% of Plan):	$391,850

Perma-Fix Environmental Serivces, Inc.
2022 Management Incentive Plan
EVP OF WASTE TREATMENT OPERATIONS MIP MATRIX

Target Objectives	Performance Target Achieved				
Weights	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 6,531	$ 13,062	$ 18,660	$ 26,123	$ 31,721
EBITDA (2)	39,185	78,371	111,958	156,741	190,328
Health & Safety (3) (6)	9,796	19,592	19,592	19,592	19,592
Permit & License Violations (4) (6)	9,796	19,592	19,592	19,592	19,592
	$ 65,308	$ 130,617	$ 169,802	$ 222,048	$ 261,233

EVP of Nuclear and Technical Services MIP:

Annualized Base Pay:	$304,772
Performance Incentive Compensation Target (at 100% of Plan):	$152,386
Total Annual Target Compensation (at 100% of Plan):	$457,158

Perma-Fix Environmental Serivces, Inc.
2022 Management Incentive Plan
EVP OF NUCLEAR & TECHNICAL SERVICES MIP MATRIX

Target Objectives	Performance Target Achieved				
	75%-89%	90%-110%	111%-129%	130%-150%	>150%
Revenue (1) (6)	$ 7,619	$ 15,239	$ 21,769	$ 30,477	$ 37,008
EBITDA (2)	45,716	91,431	130,617	182,863	222,048
Health & Safety (3) (6)	11,429	22,858	22,858	22,858	22,858
Cost Performance Incentive (5) (6)	11,429	22,858	22,858	22,858	22,858
	$ 76,193	$ 152,386	$ 198,102	$ 259,056	$ 304,772

(1) Revenue is defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2022 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue for 2022 to the Board approved Revenue target for 2022.

(2) EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations. The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA target for 2022.

(3) The Health and Safety Incentive target is based upon the actual number of Worker's Compensation Lost Time Accidents in the Company's Services Segment, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting

and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding performance target thresholds has been established for the annual Incentive Compensation Plan calculation for 2022.

Work Comp. Claim Number	Performance Target Achieved
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

(4) Permits or License Violations incentive is earned/determined according to the scale set forth below: An "official notice of non-compliance" is defined as an official communication during 2022 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which results in a facility's implementation of corrective action(s) which includes a material financial obligation, as determined by the Company's Board of Directors in their sole discretion, to the Company .

Permit and License Violations	Performance Target Achieved
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

(5) CPI incentive is earned/determined by maintaining project performance metrics for all Firm Fixed Price task orders and projects to include monitoring CPI based on recognized earned value calculations. As defined through monthly project reviews, all CPI metrics should exceed 1.0 for Nuclear Services Projects. A cumulative CPI (CCPI) will be calculated from all fixed cost contracts. The following CCPI and corresponding performance target thresholds have been established for annual incentive compensation plan calculation for 2022.

CPI (if CCPI is)	Performance Target Achieved
0.75-0.89	75%-89%
0.90-1.10	90%-110%
1.11-1.29	111%-129%
1.30-1.50	130%-150%
>1.50	>150%

(6) No performance incentive compensation will be payable for the target objective unless a minimum of 75% of the EBITDA target objective is achieved.

Long-Term Incentive Compensation

Employee Stock Option Plans

The 2017 Stock Option Plan ("2017 Plan") encourages participants to focus on long-term performance and provides an opportunity for executive officers and certain designated key employees to increase their stake in the Company. Stock options succeed by delivering value to executives only when the value of our stock increases. The 2017 Plan authorizes the grant of Non-Qualified Stock Options ("NQSOs") and Incentive Stock Options ("ISOs") for the purchase of our Common Stock.

The 2017 Plan assists the Company to:

- enhance the link between the creation of stockholder value and long-term executive incentive compensation;
- provide an opportunity for increased equity ownership by executives; and
- maintain competitive levels of total compensation;

Stock option award levels are determined based on market data, vary among participants based on their positions with the Company and are granted generally at the Compensation Committee's regularly scheduled July or August meeting. Newly hired or promoted executive officers who are eligible to receive options are generally awarded such options at the next regularly scheduled Compensation Committee meeting following their hire or promotion date.

Options are awarded with an exercise price equal to or not less than the closing price of the Company's Common Stock on the date of the grant as reported on the NASDAQ. In certain limited circumstances, the Compensation Committee may grant options to an executive at an exercise price in excess of the closing price of the Company's Common Stock on the grant date.

The Company's NEOs have outstanding options from the Company's 2017 Plan (See "Item 11 – Executive Compensation – Outstanding Equity Awards at Fiscal Year-End - Outstanding Equity Awards at December 31, 2021" for outstanding options for each of our NEOs). An option granted to our President and CEO in May 2016 for the purchase of up to 50,000 shares of the Company's Common Stock at $3.97 per share with an expiration date of May 15, 2022 remains outstanding under the 2010 Stock Option Plan. The 2010 Stock Option Plan expired on September 29, 2020; however, the option remains in effect until the earlier of the exercise date by the optionee or the maturity date of May 15, 2022.

In cases of termination of an executive officer's employment due to death, by the executive for "good reason," by the Company without cause, and due to a "change of control," all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full (see further discussion of the exercisability term of these options in each of these circumstances in "Item 11 – EXECUTIVE COMPENSATION – Employment Agreements"). Otherwise, vesting of option awards ceases upon termination of employment and exercise right of the vested option amount ceases upon three months from termination of employment except in the case of retirement (subject to a six-month limitation) and disability (subject to a one-year limitation).

Accounting for Stock-Based Compensation

We account for stock-based compensation in accordance with ASC 718, "Compensation – Stock Compensation." ASC 718 establishes accounting standards for entity exchanges of equity instruments for goods or services. It also addresses transactions in which an entity incurs liabilities in exchange for goods or services that are based on the fair value of the entity's equity instruments or that may be settled by the issuance of those equity instruments. ASC 718 requires all stock-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. The Company uses the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. 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. We recognize stock-based compensation expense using a straight-line amortization method over the requisite period, which is the vesting period of the stock option grant.

Retirement and Other Benefits

401(k) Plan

The Company adopted the Perma-Fix Environmental Services, Inc. 401(k) Plan (the "401(k) Plan") in 1992, which is intended to comply with Section 401 of the Internal Revenue Code and the provisions of the Employee Retirement Income Security Act of 1974. All full-time employees who have attained the age of 18 are eligible to participate in the 401(k) Plan. Eligibility is immediate upon employment but enrollment is only allowed during four quarterly open periods of January 1, Apri1 1, July 1, and October 1. Participating employees may make annual pretax contributions to their accounts up to 100% of their compensation, up to a maximum amount as limited by law. At our discretion, we may make matching contributions based on the employee's elective contributions. Company contributions vest over a period of five years. In 2021, the Company contributed approximately $589,000 in 401(k) matching funds, of which approximately $32,000 was for our NEOs (see the "Summary Compensation" table in this section for 401(k) matching fund contributions made for the NEOs for 2021).

Perquisites and Other Personal Benefits

The Company provides executive officers with limited perquisites and other personal benefits (health/disability/life insurance) that the Company and the Compensation Committee believe are reasonable and consistent with its overall compensation program to better enable the Company to attract and retain superior employees for key positions. The Compensation Committee periodically reviews the levels of perquisites and other personal benefits provided to executive officers. The executive officers are provided an auto allowance.

Compensation of Directors

Directors who are employees receive no additional compensation for serving on the Board or its Board of Directors Committee(s) (the "Committee(s)"). In 2021, the Company provided the following compensation to each non-employee Board member and the Board Committee(s) for which the Board member serves.

- each director was paid a quarterly fee of $11,500;
- the Chairman of the Board was paid an additional quarterly fee of $8,750;
- the Chairman of the Audit Committee was paid an additional quarterly fee of $6,250;
- the Chairman of each of the Compensation Committee, the Nominating Committee, and the Strategic Committee was paid an additional $3,125 in quarterly fees. The Chairman of the Board was not eligible to receive a quarterly fee for serving as the Chairman of any the aforementioned committees;
- each Audit Committee member (excluding the Chairman of the Audit Committee) was paid an additional quarterly fee of $1,250;
- each member of the Compensation Committee, the Nominating Committee, and the Strategic Committee was paid an additional quarterly fee of $500. Such fee was payable only if the member did not also serve as the Chairman of any other standing committees or as the Chairman of the Board; and
- a fee of $1,000 for each board meeting attendance and a $500 fee for meeting attendance via conference call.

Each director may elect to have either 65% or 100% of such fees payable in Common Stock under the 2003 Outside Directors Stock Option Plan ("2003 Outside Directors Plan"), with the balance, if any, payable in cash.

Prior to July 20, 2021, each non-employee director was also provided an option to purchase 6,000 and 2,400 shares of the Company's Common Stock upon initial election and re-election, respectively, with each option having a 10-year term and being fully vested after six months from date grant date. On July 20, 2021, at the Company's Annual Meeting of Stockholders, the Company's stockholders approved an amendment to the

Company's 2003 Outside Directors Plan which provided the following, among other thing: increased (a) the number of shares of Common Stock subject to the automatic option grant made to each non-employee director upon initial election, from 6,000 to 20,000 shares, (b) increased the number of shares of Common Stock subject to the automatic option grant made to each non-employee director upon reelection, from 2,400 to 10,000 shares, and (c) amended the vesting period of options granted under the plan, from a six-month vesting period to 25% per year, beginning on the first anniversary date of the grant.

Dr. Louis Centofanti, a current member of the Board, is not eligible to receive compensation for his service as a director of the Company as he is an employee of the Company (see "Summary Compensation" table in this section for Dr. Centofanti's annual salary and other compensation as an employee of the Company).

The table below summarizes the director compensation expenses recognized by the Company for director options and stock awards (resulting from fees earned) for the year ended December 31, 2021. The terms of the 2003 Outside Directors Plan are further described below under "2003 Outside Directors Plan."

Director Compensation

Name	Fees Earned or Paid In Cash	Stock Awards	Option Awards	Non-Equity Incentive Plan Compensation	Nonqualified Deferred Compensation Earnings	All Other Compensation	Total
	($) [1]	($) [2]	($) [4]	($)	($)	($)	($)
Thomas P. Bostick	—	69,188	38,000 [3]	—	—	—	107,188
Kerry C. Duggan	12,118	30,008	68,000 [3]	—	—	—	110,126
Joseph T. Grumski	—	90,410	38,000 [3]	—	—	—	128,410
Joe R. Reeder	—	84,669	38,000 [3]	—	—	—	122,669
Larry M. Shelton	31,850	78,859	38,000 [3]	—	—	—	148,709
Zach P. Wamp	19,211	47,572	38,000 [3]	—	—	—	104,783
Mark A. Zwecker	26,600	65,873	38,000 [3]	—	—	—	130,473

(1) Under the 2003 Outside Directors Plan, each director elects to receive 65% or 100% of the director's fees in shares of our Common Stock. The amounts set forth above represent the portion of the director's fees paid in cash and exclude the value of the director's fee elected to be paid in Common Stock under the 2003 Outside Directors Plan, which values are included under "Stock Awards."

(2) The number of shares of Common Stock comprising stock awards granted under the 2003 Outside Directors Plan is calculated based on 75% of the closing market value of the Common Stock as reported on the NASDAQ on the business day immediately preceding the date that the quarterly fee is due. Such shares are fully vested on the date of grant. The value of the stock award is based on the market value of our Common Stock at each quarter end times the number of shares issuable under the award. The amount shown is the fair value of the Common Stock on the date of the award.

(3) Reflects options granted under the Company's 2003 Outside Directors Plan resulting from re-election to the Board on July 20, 2021. Options are for a 10-year period with an exercise price of $5.93 per share and vest 25% per year, beginning on the first anniversary date of the grant. The value of the option award for each outside director is calculated based on the fair value of the option per share (approximately $3.80) on the date of grant times the number of options granted, which was 10,000 for each director, pursuant to ASC 718, "Compensation – Stock Compensation." Option awards for Kerry C. Duggan also included the grant of an option for the purchase of up to 6,000 shares of our Common Stock upon initial election to the Board on May 4, 2021. The options have a 10-year term with an exercise price of $7.50 per share and are fully vested six months from date of grant. The fair value of the 6,000 options was determined to be approximately $30,000 based on fair value of $4.97 per share.

(4) The following table reflects the aggregate number of outstanding NQSO held by the Company's directors at December 31, 2021. As an employee of the Company or its subsidiaries, Dr. Centofanti is not eligible to participate in the 2003 Outside Directors Plan. Options reflected below for Dr. Centofanti were granted from the 2017 Plan as discussed previously:

Name	Options Outstanding at December 31, 2021
Dr. Louis Centofanti	85,000
Thomas P. Bostick	16,000
Kerry C. Duggan	16,000
Joseph T. Grumski	18,400
Joe R. Reeder	31,600
Larry M. Shelton	31,600
Zach P. Wamp	23,200
Mark A. Zwecker	31,600
Total	253,400

2003 Outside Directors Plan

We believe that it is important for our directors to have a personal interest in our success and growth and for their interests to be aligned with those of our stockholders; therefore, under our 2003 Outside Directors Plan, as amended, each outside director is granted a 10-year option to purchase up to 20,000 shares of Common Stock on the date such director is initially elected to the Board, and receives on each re-election date an option to purchase up to another 10,000 shares of our Common Stock, with the exercise price being the fair market value of the Common Stock preceding the option grant date. Common Stock shares subject to option granted vest at 25% per year, beginning on the first anniversary date of the grant and no option shall be exercisable after the expiration of ten years from the date the option is granted. At December 31, 2021, options to purchase 204,400 shares of Common Stock were outstanding under the 2003 Outside Directors Plan, of which 134,400 were vested at December 31, 2021.

As a member of the Board, each director may elect to receive either 65% or 100% of his director's fee in shares of our Common Stock. The number of shares received by each director is calculated based on 75% of the fair market value of the Common Stock determined on the business day immediately preceding the date that the quarterly fee is due. The balance of each director’s fee, if any, is payable in cash. In 2021, the fees earned by our outside directors totaled approximately $556,000. Reimbursements of expenses for attending meetings of the Board are paid in cash at the time of the applicable Board meeting. As a management director, Dr. Centofanti is not eligible to participate in the 2003 Outside Directors Plan.

As of December 31, 2021, we have issued 775,346 shares of our Common Stock in payment of director fees since the inception of the 2003 Outside Directors Plan.

In the event of a “change of control” (as defined in the 2003 Outside Directors Plan), each outstanding stock option and stock award shall immediately become exercisable in full notwithstanding the vesting or exercise provisions contained in the stock option agreement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Security Ownership of Certain Beneficial Owners

The table below sets forth information as to the shares of Common Stock beneficially owned as of February 14, 2022 by each person known by us to be the beneficial owners of more than 5% of any class of our voting securities.

Name of Beneficial Owner	**Title Of Class**	**Amount and Nature of Ownership**	**Percent Of Class [1]**
Heartland Advisors, Inc. [2]	Common	1,141,000	8.6%

[1] The number of shares and the percentage of outstanding Common Stock shown as beneficially owned by a person are based upon 13,234,430 shares of Common Stock outstanding on February 14, 2022, and the number of shares of Common Stock which such person has the right to acquire beneficial ownership of within 60 days. Beneficial ownership by our stockholders has been determined in accordance with the rules promulgated under Section 13(d) of the Exchange Act.

[(2)] This information is based on the Schedule 13D of Heartland Advisors, Inc., an investment advisor, filed with the Commission on November 16, 2021 disclosing that at November 12, 2021, each Heartland Advisors, Inc. and Mr. William Nasgovitz, as a control person of Heartland Advisors, Inc. had shared dispositive power over all shares shown above and shared voting power over 1,045,500 of such shares. The address of Heartland Advisors, Inc. is 789 North Water Street, Milwaukee, WI 53202.

Additionally, Schelhammer Capital Bank AG, a banking institution regulated by the banking regulations of Austria, has represented to the Company that as of February 1, 2022, it holds of record as a nominee for, and as an agent of, certain accredited investors, 2,073,983 shares of our Common Stock. None of the Common Stock held by Schelhammer Capital Bank AG for the account of any single investor represents more than 4.9% of our Common Stock and to the best knowledge of Schelhammer Capital Bank AG, as far as stocks held by such investors in accounts with Schelhammer Capital Bank AG, none of such investors act together as a group or otherwise act in concert for the purpose of voting on matters subject to the vote of our stockholders or for purpose of disposition or investment of such stock. Additionally, the investors for whom Schelhammer Capital Bank AG acts as nominee with respect to such shares maintain full voting and dispositive power over the Common Stock beneficially owned by such investors, and Schelhammer Capital Bank AG has neither voting nor investment power over such shares. Accordingly, Schelhammer Capital Bank AG believes that (i) it is not the beneficial owner, as such term is defined in Rule 13d-3 of the Exchange Act, of the shares of Common Stock registered in Schelhammer Capital Bank AG's name because (a) Schelhammer Capital Bank AG holds the Common Stock as a nominee only, (b) Schelhammer Capital Bank AG has neither voting nor investment power over such shares, and (c) Schelhammer Capital Bank AG has not nominated or sought to nominate, and does not intend to nominate in the future, any person to serve as a member of our Board; and (ii) it is not required to file reports under Section 16(a) of the Exchange Act or to file either Schedule 13D or Schedule 13G in connection with the shares of our Common Stock registered in the name of Schelhammer Capital Bank AG.

Notwithstanding the previous paragraph, if Schelhammer Capital Bank AG's representations to us described above are incorrect or if the investors for whom Schelhammer Capital Bank AG acts as nominee are acting as a group, then Schelhammer Capital Bank AG or a group of such investors could be a beneficial owner of more than 5% of our voting securities. If Schelhammer Capital Bank AG was deemed the beneficial owner of such shares, the following table sets forth information as to the shares of voting securities that Schelhammer Capital Bank AG may be considered to beneficially own on February 1, 2022:

Name of Record Owner	Title Of Class	Amount and Nature of Ownership	Percent Of Class [*]
Schelhammer Capital Bank AG	Common	2,073,983[+]	15.7%

[*] This calculation is based upon 13,234,430 shares of Common Stock outstanding on February 14, 2022, plus the number of shares of Common Stock which Schelhammer Capital Bank AG, as agent for certain accredited investors has the right to acquire within 60 days, which is none.

[+] This amount is the number of shares that Schelhammer Capital Bank AG has represented to us that it holds of record as nominee for, and as an agent of, certain accredited investors. As of February 1, 2022, the date of Schelhammer Capital Bank AG's representations to us, Schelhammer Capital Bank AG has no warrants or options to acquire, as agent for certain investors, additional shares of our Common Stock. Although Schelhammer Capital Bank AG is the record holder of the shares of Common Stock described in this note, Schelhammer Capital Bank AG has advised us that it does not believe it is a beneficial owner of the Common Stock or that it is required to file reports under Section 16(a) or Section 13(d) of the Exchange Act. Schelhammer Capital Bank AG has advised us that it (a) holds the Common Stock as a nominee only and that it does not exercise voting or investment power over the Common Stock held in its name and that no one investor for which it holds our Common Stock holds more than 4.9% of our issued and outstanding Common Stock and (b) has not nominated, and has not sought to nominate, and does not intend to nominate in the future, any person to serve as a member of our Board. Accordingly, we do not believe that

Schelhammer Capital Bank AG is our affiliate. Schelhammer Capital Bank AG's address is Goldschmiedgasse 3, A-1010 Wien, Austria.

Security Ownership of Management

The following table sets forth information as to the shares of voting securities beneficially owned as of February 14, 2022, by each of our directors and NEOs and by all of our directors and NEOs as a group. Beneficial ownership has been determined in accordance with the rules promulgated under Section 13(d) of the Exchange Act. A person is deemed to be a beneficial owner of any voting securities for which that person has the right to acquire beneficial ownership within 60 days.

Name of Beneficial Owner [2]	Amount and Nature of Beneficial Owner [1]		Percent of Class [1]
Thomas P. Bostick [3]	18,984	[3]	*
Kerry C. Duggan [4]	10,538	[4]	*
Dr. Louis F. Centofanti [5]	280,325	[5]	2.11%
Joseph T. Grumski [6]	28,610	[6]	*
Joe R. Reeder [7]	228,239	[7]	1.72%
Larry M. Shelton [8]	160,790	[8]	1.21%
Zack P. Wamp [9]	40,746	[9]	*
Mark A. Zwecker [10]	221,093	[10]	1.67%
Mark Duff [11]	164,958	[11]	1.23%
Richard Grondin [12]	22,036	[12]	*
Andy Lombardo [13]	17,900	[13]	*
Ben Naccarato [14]	52,318	[14]	*
Directors and Executive Officers as a Group (12 persons)	1,246,537	[15]	9.16%

*Indicates beneficial ownership of less than one percent (1%).

[1] See footnote (1) of the table under "Security Ownership of Certain Beneficial Owners."

[2] The business address of each person, for the purposes hereof, is c/o Perma-Fix Environmental Services, Inc., 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

[3] Mr. Bostick has sole and voting and investment power over all shares shown, which include: (i) 12,984 shares of Common Stock held of record by Mr. Bostick, and (ii) immediately exercisable options to purchase 6,000 shares.

[4] Ms. Duggan has sole and voting and investment power over all shares shown, which include: (i) 4,538 shares of Common Stock held of record by Ms. Duggan, and (ii) immediately exercisable options to purchase 6,000 shares.

[5] These shares include (i) 168,525 shares held of record by Dr. Centofanti, (ii) immediately exercisable options to purchase 49,000 shares, and (iii) 62,800 shares held by Dr. Centofanti's wife. Dr. Centofanti has sole voting and investment power over all such shares, except for the shares held by Dr. Centofanti's wife, over which Dr. Centofanti shares voting and investment power. Dr. Centofanti also owns 700 shares of PF Medical's Common Stock.

[6] Mr. Grumski has sole and voting and investment power over all shares shown, which include: (i) 20,210 shares of Common Stock held of record by Mr. Grumski, and (ii) immediately exercisable options to purchase 8,400 shares.

[7] Mr. Reeder has sole voting and investment power over all shares shown, which include: (i) 206,639 shares of Common Stock held of record by Mr. Reeder, and (ii) immediately exercisable options to purchase 21,600 shares.

[8] Mr. Shelton has sole voting and investment power over all shares shown, which include: (i) 139,190 shares of Common Stock held of record by Mr. Shelton, and (ii) immediately exercisable options to purchase 21,600 shares. Mr. Shelton also owns 750 shares of PF Medical's Common Stock.

[9] Mr. Wamp has sole voting and investment power over all shares shown, which include: (i) 27,546 shares of Common Stock held of record by Mr. Wamp, and (ii) immediately exercisable options to purchase 13,200 shares.

[10] Mr. Zwecker has sole voting and investment power over all shares shown, which include: (i) 199,493 shares of Common Stock held of record by Mr. Zwecker, and (ii) immediately exercisable options to purchase 21,600 shares.

[11] Mr. Duff has sole voting and investment power over all shares shown, which include: (i) 19,958 shares of Common Stock held of record by Mr. Duff, and (ii) immediately exercisable options to purchase 145,000 shares.

[12] Mr. Grondin has sole voting and investment power over all shares shown, which include: (i) 36 shares of Common Stock held of record by Mr. Grondin, and (ii) immediately exercisable options to purchase 22,000 shares.

[13] Mr. Lombardo has sole voting and investment power over all shares shown, which include: (i) 5,900 shares of Common Stock held of record by Mr. Lombardo, and (ii) immediately exercisable options to purchase 12,000 shares.

[14] Mr. Naccarato has sole voting and investment power over all shares shown, which include: (i) 3,318 shares of Common Stock held of record by Mr. Naccarato, and (ii) immediately exercisable options to purchase 49,000 shares. Mr. Naccarato also owns 100 shares of PF Medical's Common Stock.

[15] Amount includes 375,400 immediately exercisable options.

Equity Compensation Plans

The following table sets forth information as of December 31, 2021, with respect to our equity compensation plans.

	Equity Compensation Plan		
Plan Category	Number of securities to be issued upon exercise of outstanding options warrants and rights	Weighted average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)
	(a)	(b)	(c)
Equity compensation plans approved by stockholders	1,019,400	$4.91	943,854
Equity compensation plans not approved by stockholders	—	—	—
Total	1,019,400	$4.91	943,854

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

We describe below transactions to which we were a party during our last two fiscal years or to which we currently propose to be a party in the future, and in which:

- the amounts involved exceeded or will exceed the lesser of $120,000 or one percent of the average of our total assets at year-end for the last two completed fiscal years; and

- any of our directors, executive officers or beneficial owners of more than 5% of any class of our voting securities, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

Audit Committee Review

Our Audit Committee Charter provides for the review by the Audit Committee of any related party transactions, other than transactions involving an employment relationship with the Company, which are reviewed by the Compensation Committee. Although we do not have written policies for the review of related party transactions, the Audit Committee reviews transactions between the Company and its directors, executive officers, holders of more than 5% of any class of the Company's voting securities, and their respective immediate family members. In reviewing a proposed transaction, the Audit Committee takes into account, among other factors it deems appropriate:

(1) the extent of the related person's interest in the transaction;
(2) whether the transaction is on terms generally available to an unaffiliated third-party under the same or similar circumstances;
(3) the cost and benefit to the Company;
(4) the impact or potential impact on a director's independence in the event the related party is a director, an immediate family member of a director or an entity in which a director is a partner, stockholder or executive officer;
(5) the availability of other sources for comparable products or services;
(6) the terms of the transaction; and
(7) the risks to the Company.

In addition, as applicable, the Audit Committee considers Section 144 of the Delaware General Corporation Law ("DGCL") and the Company's Code of Ethics.

The provisions of Section 144 of the DGCL apply to transactions between the Company and any of its officers or directors, or any organization in which any such individual has a financial interest or serves as a director or officer (individually, a "Section 144 Related Party," and, collectively, "Section 144 Related Parties"). Section 144 provides that a transaction between a corporation and any Section 144 Related Party will not be void or voidable solely because such transaction involves the corporation and the Section 144 Related Party, or solely because the Section 144 Related Party is present at or participates or votes in the meeting of the board or committee which authorizes the transaction, if the transaction (a) is approved in good faith after full disclosure of the material facts of the transaction by a majority vote of (i) the disinterested directors, or (ii) the stockholders, and (b) is fair as to the corporation as of the time it is authorized, approved, or ratified by the board, a committee or the stockholders.

The provisions of the Code of Ethics apply to our NEOs and provides that such individuals must exhibit and promote honest and ethical conduct in connection with the performance of his or her duties for and on behalf of the Company, including the ethical handling of actual or apparent conflicts of interest involving such individual and the Company, by, among other considerations:

- not entering into a transaction that would result in a conflict of interest with what is in the best interest of the Company and that is reasonably likely to result in material personal gain to any such individuals or their affiliates;
- not having a personal financial interest in any of the Company's suppliers, customers or competitors that could cause divided loyalty as a result of having the ability to influence the Company's decisions with that particular supplier or customer or actions to be taken by the Company that could materially benefit a competitor.

Related party transactions are reviewed by the Audit Committee prior to the consummation of the transaction. With respect to a related party transaction arising between Audit Committee meetings, the CFO may present it to the Audit Committee Chairperson, who will review and may approve the related party transaction subject to ratification by the Audit Committee at the next scheduled meeting. Our Audit

Committee shall approve only those transactions that, in light of known circumstances, are not inconsistent with the Company's best interests.

Related Party Transactions

David Centofanti

David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of $184,000 and $181,000 for 2021 and 2020, respectively. David Centofanti is the son of Dr. Louis F. Centofanti, our EVP of Strategic Initiatives and a Board member.

Board Independence

Our Common Stock is listed on the Nasdaq Capital Market. Rule 5605 of the Nasdaq Marketplace Rules requires a majority of a listed company's board of directors to be comprised of independent directors. In addition, the Nasdaq Marketplace Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent under applicable provisions of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Audit committee members must also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act, and compensation committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under Nasdaq Rule 5605(a)(2), a director will only qualify as an "independent director" if, in the opinion of our Board, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3 under the Exchange Act, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries. In order to be considered independent for purposes of Rule 10C-1, the board must consider, for each member of a compensation committee of a listed company, all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: the source of compensation of the director, including any consulting advisory or other compensatory fee paid by such company to the director; and whether the director is affiliated with the company or any of its subsidiaries or affiliates.

Our Board annually undertakes a review of the composition of our Board of Directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our Board of Directors has determined that Ms. Kerry C. Duggan and each of Messrs. Thomas P. Bostick, Joseph T. Grumski, Joe R. Reeder, Larry M. Shelton, Zach P. Wamp and Mark A. Zwecker is an "independent director" as defined under the Nasdaq Marketplace Rules. Our Board of Directors has also determined that each member of our Audit Committee, consisting of Mark A. Zwecker (Chairperson), Joseph T. Grumski, and Larry M. Shelton, and each member of our Compensation Committee, consisting of Joseph T. Grumski (who became a member and the Chairperson effective January 21, 2021), Zach P. Wamp (who became a member effective January 21, 2021), Mark A. Zwecker, Larry M. Shelton (who was replaced by Joseph T. Grumski as a member and the Chairperson effective January 21, 2021), and Joe R. Reeder (who was replaced by Zach P. Wamp as a member effective January 21, 2021) satisfy/satisfied the independence standards for such committees established by the Commission and the Nasdaq Marketplace Rules, as applicable. In making such determination, our Board of Directors considered the relationships that each such non-employee director has with our Company and all other facts and circumstances our Board of Directors deemed relevant in determining independence, including the beneficial ownership of our capital stock by each non-employee director.

Our Board of Directors has determined that Dr. Centofanti is not deemed to be an "independent director" because of his employment as a senior executive of the Company.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table reflects the aggregate fees for the audit and other services provided by Grant Thornton LLP, the Company's independent registered public accounting firm, for fiscal years 2021 and 2020:

Fee Type	2021	2020
Audit Fees[1]	$ 968,000	$ 573,000
Tax Fees [2]	146,000	104,000
Total	$ 1,114,000	$ 677,000

[1] Audit fees consist of audit work performed in connection with the annual financial statements, the reviews of unaudited quarterly financial statements, and work generally only the independent registered accounting firm can reasonably provide, such as consents and review of regulatory documents filed with the Securities and Exchange Commission.

[2] Fees for income tax planning, filing, and consulting.

Engagement of the Independent Auditor

To ensure that our independent registered public accounting firm is engaged only to provide audit and non-audit services that are compatible with maintaining its independence, the Audit Committee has a policy that requires the Committee to review and approve in advance all services to be provided by the Company's independent accounting firm before the firm is engaged to provide those services. The Audit Committee considers non-audit services and fees when assessing auditor independence, and determined that tax return preparation and other tax compliance services is compatible with maintaining our accounting firm's independence. All services under the headings Audit Fees and Tax Fees were approved by the Audit Committee pursuant to paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X of the Exchange Act. The Audit Committee's pre-approval policy provides as follows:

- The Audit Committee will review and pre-approve on an annual basis all audits, audit-related, tax and other services, along with acceptable cost levels, to be performed by the independent accounting firm and any member of the independent accounting firm's alliance network of firms, and may revise the pre-approved services during the period based on later determinations. Pre-approved services typically include: audits, quarterly reviews, regulatory filing requirements, consultation on new accounting and disclosure standards, employee benefit plan audits, reviews and reporting on management's internal controls and specified tax matters.
- Any proposed service that is not pre-approved on the annual basis requires a specific pre-approval by the Audit Committee, including cost level approval.
- The Audit Committee may delegate pre-approval authority to one or more of the Audit Committee members. The delegated member must report to the Audit Committee, at the next Audit Committee meeting, any pre-approval decisions made.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

The following documents are filed as a part of this report:

(a)(1) Consolidated Financial Statements

See Item 8 for the Index to Consolidated Financial Statements.

(a)(2) Financial Statement Schedule

Schedules are not required, are not applicable or the information is set forth in the consolidated financial statements or notes thereto.

(a)(3) Exhibits

The Exhibits listed in the Exhibit Index are filed or incorporated by reference as a part of this report.

SIGNATURES

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

Perma-Fix Environmental Services, Inc.

By /s/ Mark Duff Date April 6, 2022
Mark Duff
Chief Executive Officer, President and
Principal Executive Officer

By /s/ Ben Naccarato Date April 6, 2022
Ben Naccarato
Chief Financial Officer and
Principal Financial Officer

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

By /s/ Thomas P. Bostick Date April 6, 2022
Thomas P. Bostick, Director

By /s/ Kerry C. Duggan Date April 6, 2022
Kerry C. Duggan, Director

By /s/ Dr. Louis F. Centofanti Date April 6, 2022
Dr. Louis F. Centofanti, Director

By /s/Joseph T. Grumski Date April 6, 2022
Joseph T. Grumski

By /s/ Joe R. Reeder Date April 6, 2022
Joe R. Reeder, Director

By /s/ Larry M. Shelton Date April 6, 2022
Larry M. Shelton, Chairman of the Board

By /s/ Zach P. Wamp Date April 6, 2022
Zach P. Wamp, Director

By /s/ Mark A. Zwecker Date April 6, 2022
Mark A. Zwecker, Director

EXHIBIT INDEX

Exhibit No.	Description
3(i)	Restated Certificate of Incorporation, as amended, of Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 3(i) to the Company's Form 10-Q for Quarter ended March 31, 2021filed on May 6, 2021.
3(ii)	Second Amended and Restated Bylaws, as amended effective January 21, 2021, of Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 3(ii) to the Company's 8-K filed on January 26, 2021.
4.1	Second Amended and Restated Revolving Credit, Term Loan and Security Agreement between Perma-Fix Environmental Services, Inc. and PNC Bank, National Association (as Lender and as Agent), dated May 8, 2020, as incorporated by reference from Exhibit 4.1 to the Company's Form 10-Q for the Quarter ended March 31, 2020 filed on May 12, 2020.
4.2	First Amendment to Second Amended and Restated Revolving Credit, Term Loan and Security Agreement between Perma-Fix Environmental Services, Inc. and PNC Bank, National Association (as Lender and as Agent), dated May 4, 2021, as incorporated by reference from Exhibit 4.1 to the Company's Form 10-Q for the Quarter Ended March 31, 2021 filed on May 6, 2021.
4.3	Second Amendment to Second Amended and Restated Revolving Credit, Term Loan and Security Agreement between Perma-Fix Environmental Services, Inc. and PNC Bank, National Association (as Lender and as Agent), dated August 10, 2021, as incorporated by reference from Exhibit 4.3 to the Company's Form 10-Q for the Quarter Ended June 30, 2021 filed on August 11, 2021.
4.4	Third Amendment to Second Amended and Restated Revolving Credit, Term Loan and Security Agreement between Perma-Fix Environmental Services, Inc. and PNC Bank, National Association (as Lender and as Agent), dated March 29, 2022, as incorporated by reference from Exhibit 4.1 to the Company's Form 8-K filed on April 4, 2022.
4.5	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.
10.1	2003 Outside Directors' Stock Plan of the Company, as incorporated by reference from Exhibit 10.1 to the Company's 2019 Form 10-K filed on March 20, 2020.
10.2	First Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit 10.2 to the Company's 2019 Form 10-K filed on March 20, 2020.
10.3	Second Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit 10.3 to the Company's 2017 Form 10-K filed on March 16, 2018.
10.4	Third Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit 10.4 to the Company's 2017 Form 10-K filed on March 16, 2018.
10.5	Fourth Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit A to the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders filed on June 22, 2017.
10.6	Fifth Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit A to the Company's Proxy Statement for its 2021 Annual Meeting of Stockholders filed on June 10, 2021.
10.7	2017 Stock Option Plan, as incorporated by reference from Exhibit B to the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders filed on June 22, 2017.
10.8	First Amendment to 2017 Stock Option Plan, as incorporated by reference from Appendix "A" to the Company's Proxy Statement for its 2020 Annual Meeting of Stockholders filed on June 12, 2020.
10.9	Employment Agreement dated July 22, 2020 between Mark Duff, Chief Executive Officer, and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.1 to the Company's Form 8-K filed on July 27, 2020.

10.10 Employment Agreement dated July 22, 2020 between Dr. Louis Centofanti, Executive Vice President of Strategic Initiatives, and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.2 to the Company's Form 8-K filed on July 27, 2020.

10.11 Employment Agreement dated July 22, 2020 between Ben Naccarato, Chief Financial Officer, and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.3 to the Company's Form 8-K filed on July 27, 2020.

10.12 Employment Agreement dated July 22, 2020 between Andy Lombardo, EVP of Nuclear and Technical Services, Inc. and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.4 to the Company's Form 8-K filed on July 27, 2020.

10.13 Employment Agreement dated July 22, 2020 between Richard Grondin, EVP of Waste Treatment Operations and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.5 to the Company's Form 8-K filed on July 27, 2020.

10.14 2022 Incentive Compensation Plan for Chief Executive Officer, effective January 1, 2022, as incorporated by reference from Exhibit 99.5 to the Company's Form 8-K filed on January 25, 2022. CERTAIN INFORMATION WITHIN THIS EXHIBIT HAS BEEN EXCLUDED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

10.15 2022 Incentive Compensation Plan for Chief Financial Officer, effective January 1, 2022, as incorporated by reference from Exhibit 99.6 to the Company's Form 8-K filed on January 25, 2022. CERTAIN INFORMATION WITHIN THIS EXHIBIT HAS BEEN EXCLUDED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

10.16 2022 Incentive Compensation Plan for Executive Vice President of Strategic Initiatives, effective January 1, 2022, as incorporated by reference from Exhibit 99.7 to the Company's Form 8-K filed on January 25, 2022. CERTAIN INFORMATION WITHIN THIS EXHIBIT HAS BEEN EXCLUDED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

10.17 2022 Incentive Compensation Plan for Executive Vice President of Nuclear and Technical Services, effective January 1, 2022, as incorporated by reference from Exhibit 99.8 to the Company's Form 8-K filed on January 25, 2022. CERTAIN INFORMATION WITHIN THIS EXHIBIT HAS BEEN EXCLUDED BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

10.18 2022 Incentive Compensation Plan for Executive Vice President of Waste Treatment Operations, effective January 1, 2022, as incorporated by reference from Exhibit 99.9 to the Company's Form 8-K filed on January 25, 22. CERTAIN INFORMATION WITHIN THIS EXHIBIT HAS BEEN EXCLUDED BECAUSE IT IS NOT MATERIAL AND WOULD LLIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

10.19 Incentive Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc., and Chief Executive Officer, as incorporated by reference from Exhibit 99.1 to the Company's Form 8-K filed on August 2, 2017.

10.20 Incentive Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc., and Executive Vice President/Chief Operating Officer, as incorporated by reference from Exhibit 99.2 to the Company's Form 8-K filed on August 2, 2017.

10.21 Incentive Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc., and Chief Financial Officer, as incorporated by reference from Exhibit 99.3 to the Company's Form 8-K filed on August 2, 2017.

10.22 Incentive Stock Option Agreement dated January 17, 2019 between Perma-Fix Environmental Services, Inc., and Chief Executive Officer, as incorporated by reference from Exhibit 99.4 to the Company's Form 8-K filed on January 23, 2019.

10.23	Incentive Stock Option Agreement dated January 17, 2019 between Perma-Fix Environmental Services, Inc., and Chief Financial Officer, as incorporated by reference from Exhibit 99.5 to the Company's Form 8-K filed on January 23, 2019.
10.24	Incentive Stock Option Agreement dated January 17, 2019 between Perma-Fix Environmental Services, Inc., and EVP of Strategic Initiatives, as incorporated by reference from Exhibit 99.6 to the Company's Form 8-K filed on January 23, 2019.
10.25	Incentive Stock Option Agreement dated October 19, 2017 between Perma-Fix Environmental Services, Inc., and Richard Grondin, as incorporated by reference from Exhibit 99.11 to the Company's Form 8-K filed on July 27, 2020.
10.26	Incentive Stock Option Agreement dated January 17, 2019 between Perma-Fix Environmental Services, Inc., and Richard Grondin, as incorporated by reference from Exhibit 99.12 to the Company's Form 8-K filed July 27, 2020.
10.27	Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc., and Mr. Robert L. Ferguson, as incorporated by reference from Exhibit 10.6 to the Company's second quarter Form 10-Q filed on August 9, 2017.
10.28	First Amendment to Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc. and Mr. Robert L. Ferguson, as incorporated by reference from Exhibit 10.23 to the Company 2018 Form 10-K filed on April 1, 2019.
10.29	Second Amendment to Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc. and Mr. Robert L. Ferguson, as incorporated by reference from Exhibit 99.3 to the Company Form 8-K filed on March 31, 2020.
10.30	Third Amendment to Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc. and Mr. Robert L. Ferguson, as incorporated by reference from Exhibit 99.4 to the Company Form 8-K filed on January 25, 2022.
10.31	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 quarter 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.
10.32	Solicitation, Offer and Award dated September 17, 2021 issued to Perma-Fix Environmental Services, Inc. by Norfolk Naval Shipyard, as incorporated by reference from Exhibit 10.1 to the Company Form 10- for the Quarter Ended September 30, 2021 filed on November 12, 2021.
10.33	Placement Agency Agreement, dated as of September 23, 2021, by and between the Company and Wellington Shields & Co., LLC., as incorporated by reference from Exhibit 10.1 to the Company's Form 8-K filed on October 4, 2021.
10.34	Form of Subscription Agreement, dated as of September 30, 2021, between the Company and each purchase named in the signature pages of the respective Subscription Agreements, as incorporated by reference from Exhibit 10.2 to the Company's Form 8-K filed on October 4, 2021.
10.35	Time and Material Master Task Ordering Agreement Subcontract Form of Agreement (subcontract 573512) dated February 23, 2020 and Modification 4 between Perma-Fix Environmental Services, Inc. and Triad National Security, LLC., as incorporated by reference from Exhibit 10.34 to the Company Form 10-K filed on March 29, 2021. CERTAIN INFORMATION OF THIS EXHIBIT WITHIN "EXHIBIT C" – "Form A-1 SCHEDULE OF RATES AND NOT-TO-EXCEED AMOUNTS" HAS BEEN EXCLUDED FROM THE EXHIBIT BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBICLY DISCLOSED.

10.36	Time and Material Master Task Ordering Agreement Subcontract Form of Agreement (subcontract 554628) dated August 21, 2019 and Modification 6 between Perma-Fix Environmental Services, Inc. and Triad National Security, LLC., as incorporated by reference from Exhibit 10.35 to the Company's Form 10-K filed on March 29, 2021. CERTAIN INFORMATION OF THIS EXHIBIT WITHIN "EXHIBIT C" – "FORM A-1 SCHEDULE OF RATES AND NOT-TO-EXCEED AMOUNTS" HAS BEEN EXCLUDED FROM THE EXHIBIT BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBICLY DISCLOSED.
10.37	Incentive Stock Option Agreement between Perma-Fix Environmental Services, Inc. and Chief Executive Officer, dated October 14, 2021, as incorporated by reference from Exhibit 99.1 to the Company's Form 8-K/A filed on October 20, 2021.
10.38	Incentive Stock Option Agreement between Perma-Fix Environmental Services, Inc. and Chief Financial Officer, dated October 14, 2021, as incorporated by reference from Exhibit 99.2 to the Company's Form 8-K/A filed on October 20, 2021.
10.39	Incentive Stock Option Agreement between Perma-Fix Environmental Services, Inc. and EVP of Strategic Initiatives, dated October 14, 2021, as incorporated by reference from Exhibit 99.3 to the Company's Form 8-K/A filed on October 20, 2021.
10.40	Incentive Stock Option Agreement between Perma-Fix Environmental Services, Inc. and EVP of Waste Treatment Operations, dated October 14, 2021, as incorporated by reference from Exhibit 99.4 to the Company's Form 8-K/A filed on October 20, 2021.
10.41	Incentive Stock Option Agreement between Perma-Fix Environmental Services, Inc. and EVP of Nuclear and Technical Services, dated October 14, 2021, as incorporated by reference from Exhibit 99.5 to the Company's Form 8-K/A filed on October 20, 2021.
10.42	Joint Venture Term Sheet between Springfields Fuels Limited, an affiliate of Westinghouse, and the Company. CERTAIN INFORMATION WITHIN 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.
21.1	List of Subsidiaries
23.1	Consent of Grant Thornton, LLP
31.1	Certification by Mark Duff, Chief Executive Officer and Principal Executive Officer of the Company pursuant to Rule 13a-14(a) and 15d-14(a).
31.2	Certification by Ben Naccarato, Chief Financial Officer and Principal Financial Officer of the Company pursuant to Rule 13a-14(a) and 15d-14(a).
32.1	Certification by Mark Duff, Chief Executive Officer and Principal Executive Officer of the Company furnished pursuant to 18 U.S.C. Section 1350.
32.2	Certification by Ben Naccarato, Chief Financial Officer and Principal 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.

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EXHIBIT 31.1

CERTIFICATIONS

I, Mark Duff, certify that:

1. I have reviewed this annual report on Form 10-K 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: April 6, 2022

/s/ Mark Duff

Mark Duff
Chief Executive Officer, President
and Principal Executive Officer

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EXHIBIT 31.2

CERTIFICATIONS

I, Ben Naccarato, certify that:

1. I have reviewed this annual report on Form 10-K 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: April 6, 2022

/s/ Ben Naccarato

Ben Naccarato
Chief Financial Officer and
Principal Financial Officer

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Corporate Information

Board of Directors

Thomas P. Bostick
CEO of
Bostick Global Strategies, LLC
(Director since 2020)[2]

Dr. Louis F. Centofanti
Executive Vice President of
Strategic Initiatives
(Director since 1991)[4]

Kerry C. Duggan
Founder and Principal of
SustainabiliD
(Director since May 2021)[2][4]

Joseph T. Grumski
Director
President and Chief Executive
Officer of TAS Energy, Inc.
(Director since 2020)[1][3]

Joe R. Reeder
Director
Shareholder of
Greenburg Traurig, LLP,
Former Army Undersecretary
(Director since 2003)[2][4]

Larry M. Shelton
Chairman of the Board
(Director since 2006)[1]

Zach P. Wamp
Director
President of
Zach Wamp Consulting
(Director since 2018)[2][3]

Mark A. Zwecker
Director
(Director since 1991)[1][3][4]

[1] Member of Audit Committee
[2] Member of Corporate Governance and Nominating Committee
[3] Member of Compensation and Stock Option Committee
[4] Member of Strategic Advisory Committee

Management Team

Mark Duff
President and
Chief Executive Officer

Ben Naccarato
Executive Vice President and
Chief Financial Officer

Dr. Louis F. Centofanti
Executive Vice President of
Strategic Initiatives

Andrew Lombardo
Executive Vice President of
Nuclear and Technical Services

Richard Grondin
Executive Vice President of
Waste Treatment Operations

Corporate Information

Executive Offices
8302 Dunwoody Place, Suite 250
Atlanta, Georgia 30350
Telephone: 770-587-9898
Fax: 770-587-9937

Transfer Agent and Registrar
Continental Stock Transfer
& Trust Company
One State Street Plaza, 30th Floor
New York, New York 10004

Independent Registered
Public Accounting Firm
Grant Thornton LLP
1100 Peachtree Street NE #1200
Atlanta, Georgia 30309

Stock Listing
The common stock of Perma-Fix Environmental Services, Inc. is listed on Nasdaq where it is traded under the ticker symbol PESI.

Stockholder Inquiries
Inquiries concerning stockholder records should be addressed to the Transfer Agent listed above. Comments or questions concerning the operations of the Company should be addressed to the Secretary, Perma-Fix Environmental Services, Inc., 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

Included within this Annual Report is a list briefly describing all exhibits listed in the Company's Form 10-K. We will furnish any exhibit to a shareholder upon receipt of a written request and payment of a specified reasonable fee, which fee shall be limited to the registrant's reasonable expenses in furnishing such exhibit. Each request must set forth a good-faith representation that, as of the record date for the solicitation of proxies, the person making the request was a beneficial owner of securities of the Company entitled to vote.

The Company defines EBITDA as earnings before interest, taxes, depreciation and amortization. Adjusted EBITDA is defined as EBITDA before research and development costs related to the Medical Isotope project, (gain) loss on extinguishment of debt, closure costs accrued for East Tennessee Materials and Energy Corporation (M&EC), and loss on deconsolidation of subsidiary (where applicable). Both EBITDA and adjusted EBITDA are not measures of performance calculated in accordance with accounting standards generally accepted in the United States of America ("U.S. GAAP"), and should not be considered in isolation of, or as a substitute for, earnings as an indicator of operating performance or cash flows from operating activities as a measure of liquidity. The Company believes the presentation of EBITDA and adjusted EBITDA is relevant and useful by enhancing the readers' ability to understand the Company's operating performance. The Company's management utilizes EBITDA and adjusted EBITDA as a means to measure performance. The Company's measurements of EBITDA and adjusted EBITDA may not be comparable to similar titled measures reported by other companies. The table below reconciles EBITDA and adjusted EBITDA, both non-GAAP measures, to GAAP numbers for income from continuing operations for the period noted.

(In thousands)	Fiscal Year 2021	Fiscal Year 2020	Fiscal Year 2019
Income from continuing operations	$ 1,092	$ 3,149	$ 2,732
Adjustments:			
Depreciation and amortization	1,687	1,596	1,342
Interest income	(26)	(140)	(337)
Interest expense	247	398	432
Interest expense—financing fees	41	294	208
Income tax (benefit) expense	(3,890)	(189)	157
EBITDA	(849)	5,108	4,534
Research and development costs related to medical isotope project	414	311	314
(Gain) loss on extinguishment of debt	(5,381)	27	—
Closure costs accrued for M&EC subsidiary	—	—	330
Loss on deconsolidation of subsidiary	1,062	—	—
Adjusted EBITDA	$ (4,754)	$ 5,446	$ 5,178

Certain statements contained in the Shareholders' letter, which have been added to this Annual Report on Form 10-K, may be deemed additional forward-looking statements. All estimates, projections, and other statements generally identifiable by the use of the words "believe," "expect," "intend," "anticipate," "plans to" and similar expressions (except statements of historical facts) contained therein are forward-looking statements, including but not limited to, growth in 2022; solid foundation for balance of this year; new projects in the second and third quarters; new markets; recurring revenues and cash flow; increased demand; commencement of second phase of TBI project; revenue potential; exceed performance levels prior to the pandemic; enhancing ESG policies; advancing our missions; and best years ahead. See "Special Note Regarding Forward-Looking Statements" contained in this Form 10-K that is part of the Annual Report and our Form 10-Q for quarter ended March 31, 2022, for discussion of factors which could cause future outcomes to differ materially from those described herein.

The Shareholders' letter should be read in conjunction with the "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in the Form 10-K contained within this 2021 Annual Report and our Form 10-Q for the quarter ended March 31, 2022.

Annual Report Design by Curran & Connors, Inc. / www.curran-connors.com

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